

FCC Test Report (DFS Band)

Report No.: RF200603E15A-1

FCC ID: K7S-03580

Test Model: MX4200

Series Model: MX4050, MX4000, MX4200C

Received Date: June 03, 2020

Test Date: June 23 to Aug. 06, 2020

Issued Date: Jan. 12, 2021

Applicant: Belkin International, Inc.

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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF200603E15A-1	Original release.	Jan. 12, 2021

1 Certificate of Conformity

Product: Velop AX4200 WiFi 6 System

Brand: Linksys

Test Model: MX4200

Series Model: MX4050, MX4000, MX4200C

Sample Status: ENGINEERING SAMPLE

Applicant: Belkin International, Inc.

Test Date: June 23 to Aug. 06, 2020

Standard: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10: 2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Phoenix Huang , **Date:** Jan. 12, 2021
Phoenix Huang / Specialist

Approved by : Clark Lin , **Date:** Jan. 12, 2021
Clark Lin / Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -11.75 dB at 0.15000 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1 dB at 5353.78 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex(MHF) not a standard connector.

Note:

1. For U-NII-2A, U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (DFS Band)

Product	Velop AX4200 WiFi 6 System
Brand	Linksys
Test Model	MX4200
Series Model	MX4050, MX4000, MX4200C
Status of EUT	ENGINEERING SAMPLE
Driver Version	1.0.4.203503
Power Supply Rating	12Vdc from power adapter
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only 1024QAM for OFDMA in 11ax HE mode
Modulation Technology	OFDM, OFDMA
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 600 Mbps 802.11ac: up to 1733.3 Mbps 802.11ax: up to 2401.9 Mbps
Operating Frequency	5.26 ~ 5.32 GHz, 5.50 ~ 5.72 GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20): 16 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40): 8 802.11ac (VHT80), 802.11ax (HE80): 4
Output Power	CDD Mode: 5.26 ~ 5.32 GHz: 239.143 mW 5.5 ~ 5.72 GHz: 241.145 mW Beamforming Mode: 5.26 ~ 5.32 GHz: 154.919 mW 5.5 ~ 5.72 GHz: 112.475 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

- This report is prepared for FCC class II change. The difference compared with the Report No.: RF200603E15-1 as the following:
 - ◆ Add DFS band <5250~5350 MHz & 5470~5725 MHz> by software.
- According to above conditions, for DFS band all of test items need to be performed and all data was verified to meet the requirements.

3. All models are listed as below.

Brand	Model	Difference
Linksys	MX4200	for marketing request
	MX4050	
	MX4000	
	MX4200C	

Note: From the above models, model: MX4200 was selected as representative model for the test and its data was recorded in this report.

4. There are WLAN and Bluetooth technology used for the EUT. The EUT has four radios as following table:

Radio 1	Radio 2	Radio 3	Radio 4
WLAN 2.4GHz	WLAN 5GHz (low band)	WLAN 5GHz (high band)	Bluetooth

5. Simultaneously transmission condition.

Condition	Technology			
1	WLAN 2.4GHz	WLAN 5GHz (low band)	WLAN 5GHz (high band)	Bluetooth

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

6. The EUT must be supplied power adapter and following different models could be chosen as following table:

No.	Brand	Model No.	Spec.	Plug
1	APD	WA-36N12R	Input: 100-240Vac, 0.9A, 50-60Hz Output: 12Vdc, 3.0A DC Output cable: Unshielded, 1.5m	Interchangeable
2	APD	WA-36N12FU	Input: 100-240Vac, 0.9A, 50-60Hz Output: 12Vdc, 3.0A DC Output cable: Unshielded, 1.5m	US
3	LEI	MU36B1120300-A1	Input: 100-240Vac, 1A, 50/60Hz Output: 12Vdc, 3.0A DC Output cable: Unshielded, 1.5m	US

Note: In original report, from the above adapters, the worst case of Radiated Emissions and AC Power Conducted Emission was found in **Adapter 2**. Therefore only the test data of the mode was recorded in this report.

7. The antennas provided to the EUT, please refer to the following table:

Ant. No.	Transmitter Circuit	Ant.Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type
WiFi LB_1	Dual A	3.1	2.4~2.4835	PCB	i-pex(MHF)
		3.5	5.15~5.25		
		5	5.25~5.35		
		3.7	5.47~5.725		
		4.6	5.725~5.85		
WiFi LB_2	Dual B	2.8	2.4~2.4835	PCB	i-pex(MHF)
		4.8	5.15~5.25		
		5.1	5.25~5.35		
		5	5.47~5.725		
		4.7	5.725~5.85		
WiFi HB_1	5/6G A	3	5.15~5.25	PCB	i-pex(MHF)
		3.8	5.25~5.35		
		3.7	5.47~5.725		
		3.7	5.725~5.85		
WiFi HB_2	5/6G B	3.3	5.15~5.25	PCB	i-pex(MHF)
		4.1	5.25~5.35		
		3.3	5.47~5.725		
		3.3	5.725~5.85		
WiFi HB_3	5/6G C	2.6	5.15~5.25	PCB	i-pex(MHF)
		3.6	5.25~5.35		
		4.1	5.47~5.725		
		3.9	5.725~5.85		
WiFi HB_4	5/6G D	2.4	5.15~5.25	PCB	i-pex(MHF)
		2.9	5.25~5.35		
		2.6	5.47~5.725		
		3.8	5.725~5.85		
BT	-	2.1	2.4~2.4835	PCB	i-pex(MHF)

8. The EUT incorporates a MIMO function.

MODULATION MODE	Radio 1 - 2.4GHz Band			
	TX & RX CONFIGURATION			
802.11b	2TX		2RX	
802.11g	2TX		2RX	
802.11n (HT20)	2TX		2RX	
802.11n (HT40)	2TX		2RX	
VHT20	2TX		2RX	
VHT40	2TX		2RX	
802.11ax (HE20)	2TX		2RX	
802.11ax (HE40)	2TX		2RX	
MODULATION MODE	Radio 2 - 5GHz Band (low band)		Radio 3 - 5GHz Band (high band)	
	TX & RX CONFIGURATION		TX & RX CONFIGURATION	
802.11a	2TX	2RX	4TX	4RX
802.11n (HT20)	2TX	2RX	4TX	4RX
802.11n (HT40)	2TX	2RX	4TX	4RX
802.11ac (VHT20)	2TX	2RX	4TX	4RX
802.11ac (VHT40)	2TX	2RX	4TX	4RX
802.11ac (VHT80)	2TX	2RX	4TX	4RX
802.11ax (HE20)	2TX	2RX	4TX	4RX
802.11ax (HE40)	2TX	2RX	4TX	4RX
802.11ax (HE80)	2TX	2RX	4TX	4RX

Note:

1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz), 802.11ac mode for 20MHz (40MHz, 80MHz) and 802.11ax mode for 20MHz (40MHz, 80MHz), therefore the manufacturer will control the power for 802.11n/ac mode is the same as the 802.11ax or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)

9. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

10. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

FOR 5260 ~ 5320MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency
58	5290 MHz

FOR 5500 ~ 5720MHz

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channels are provided for 802.11ac (VHT80), 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	138	5690 MHz
122	5610 MHz		

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE \geq 1G	RE<1G	PLC	APCM	
1	√	√	√	√	-

Where **RE \geq 1G**: Radiated Emission above 1GHz
RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission
APCM: Antenna Port Conducted Measurement

Radiated Emission Test (Above 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6Mb/s
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	MCS0

Radiated Emission Test (Below 1GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE40)	5260-5320	54 to 62	54	OFDMA	BPSK	MCS0
802.11ax (HE80)	5500-5720	102 to 142	122	OFDMA	BPSK	MCS0

Power Line Conducted Emission Test:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ax (HE40)	5260-5320	54 to 62	54	OFDMA	BPSK	MCS0
802.11ax (HE80)	5500-5720	102 to 142	122	OFDMA	BPSK	MCS0

Antenna Port Conducted Measurement:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6Mb/s
802.11ac (VHT20) (for output power)		52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40) (for output power)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80) (for output power)		58	58	OFDM	BPSK	MCS0
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11a		5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK
802.11ac (VHT20) (for output power)	100 to 144		100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40) (for output power)	102 to 142		102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80) (for output power)	106 to 138		106, 122, 138	OFDM	BPSK	MCS0
802.11ax (HE20)	100 to 144		100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)	102 to 142		102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)	106 to 138		106, 122, 138	OFDMA	BPSK	MCS0
Beamforming Mode (output power only)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate Parameter
802.11ac (VHT20)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	MCS0
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	MCS0
802.11ac (VHT80)		58	58	OFDM	BPSK	MCS0
802.11ax (HE20)		52 to 64	52, 60, 64	OFDMA	BPSK	MCS0
802.11ax (HE40)		54 to 62	54, 62	OFDMA	BPSK	MCS0
802.11ax (HE80)		58	58	OFDMA	BPSK	MCS0
802.11ac (VHT20)	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	MCS0
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	MCS0
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	MCS0
802.11ax (HE20)		100 to 144	100, 116, 140, 144	OFDMA	BPSK	MCS0
802.11ax (HE40)		102 to 142	102, 110, 134, 142	OFDMA	BPSK	MCS0
802.11ax (HE80)		106 to 138	106, 122, 138	OFDMA	BPSK	MCS0

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE \geq 1G	22deg. C, 68%RH	120Vac, 60Hz	Nelson Teng
RE $<$ 1G	23deg. C, 67%RH	120Vac, 60Hz	Dyan Du
PLC	25deg. C, 75%RH	120Vac, 60Hz	Sampson Chen
APCM	24deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

For Radio 2

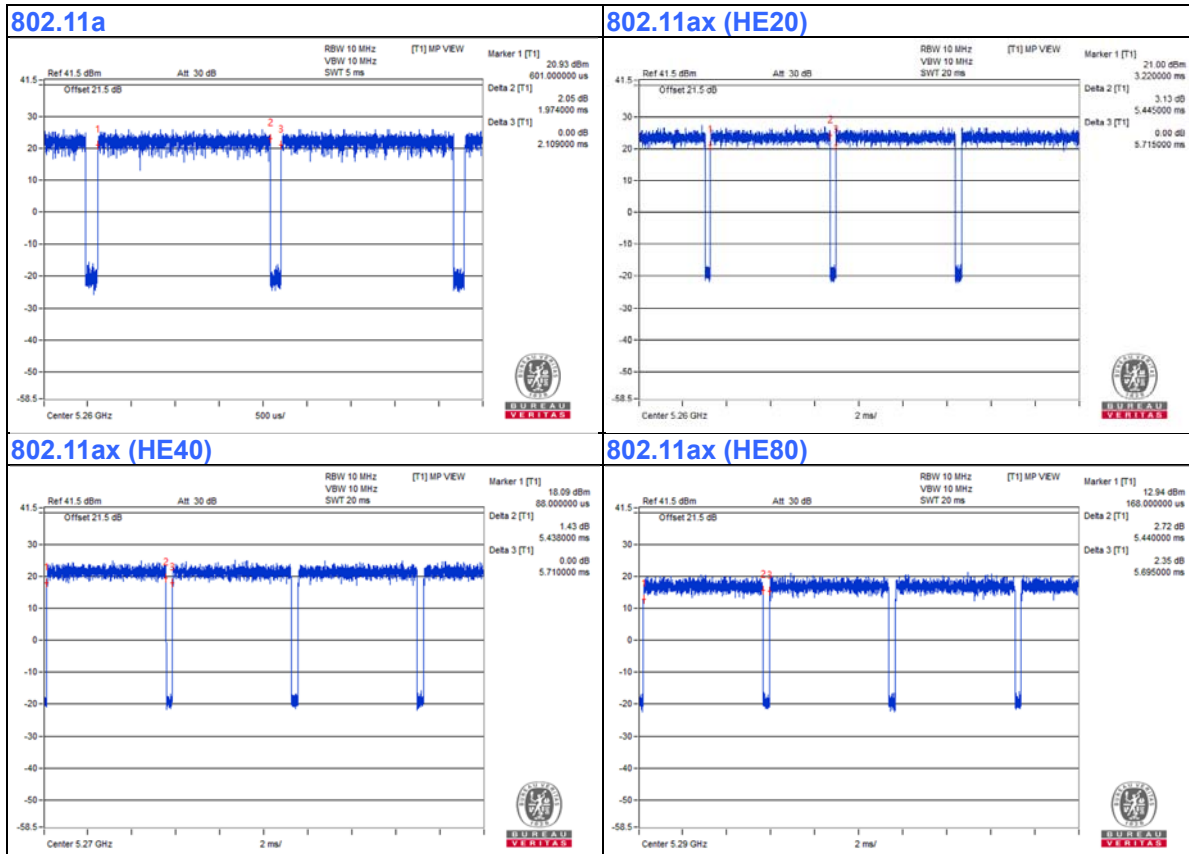
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 1.974 ms/2.109 ms = 0.936, Duty factor = 10 * log (1/Duty cycle) = 0.29 dB

802.11ax (HE20): Duty cycle = 5.445 ms/5.715 ms = 0.953, Duty factor = 10 * log (1/Duty cycle) = 0.21 dB

802.11ax (HE40): Duty cycle = 5.438 ms/5.71 ms = 0.952, Duty factor = 10 * log (1/Duty cycle) = 0.21 dB

802.11ax (HE80): Duty cycle = 5.44 ms/5.695 ms = 0.955, Duty factor = 10 * log (1/Duty cycle) = 0.2 dB



For Radio 3

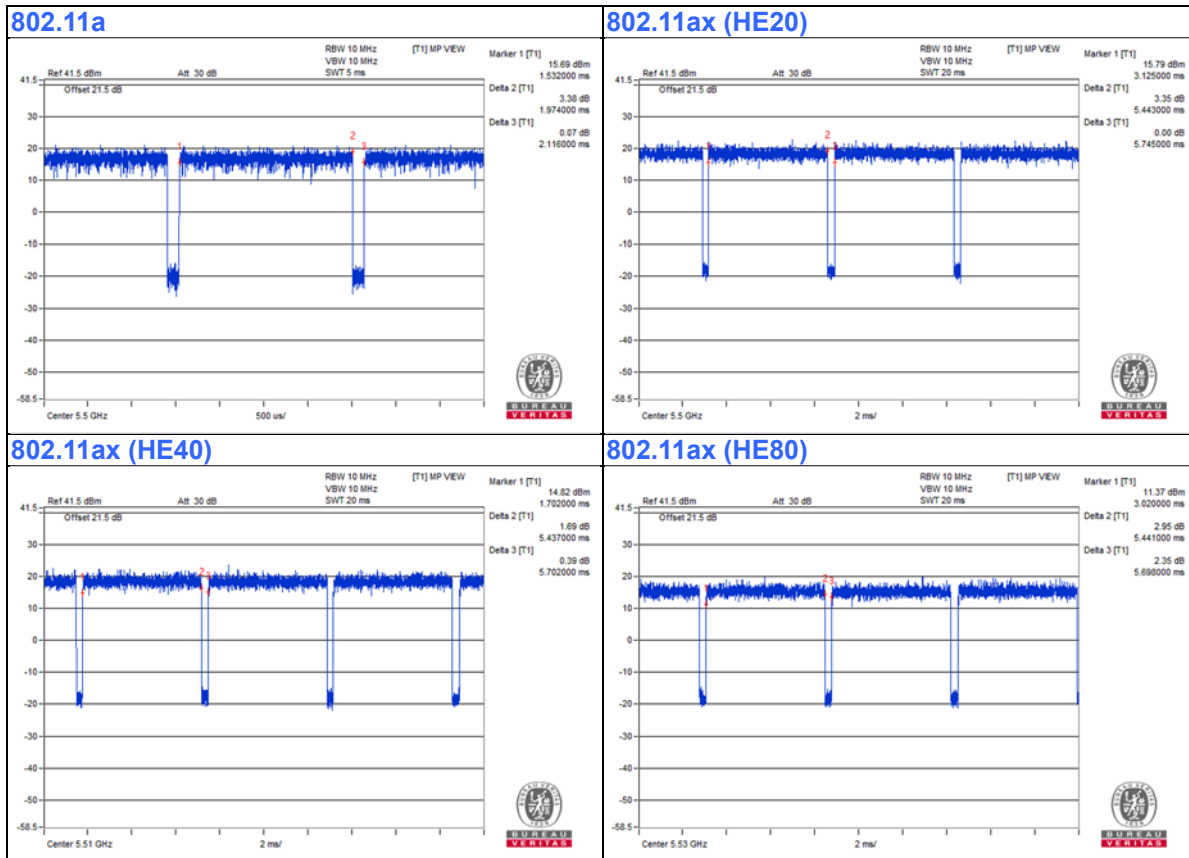
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 1.974 ms/2.116 ms = 0.933, Duty factor = 10 * log (1/Duty cycle) = 0.3 dB

802.11ax (HE20): Duty cycle = 5.443 ms/5.745 ms = 0.947, Duty factor = 10 * log (1/Duty cycle) = 0.23 dB

802.11ax (HE40): Duty cycle = 5.437 ms/5.702 ms = 0.954, Duty factor = 10 * log (1/Duty cycle) = 0.21 dB

802.11ax (HE80): Duty cycle = 5.441 ms/5.698 ms = 0.955, Duty factor = 10 * log (1/Duty cycle) = 0.2 dB



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

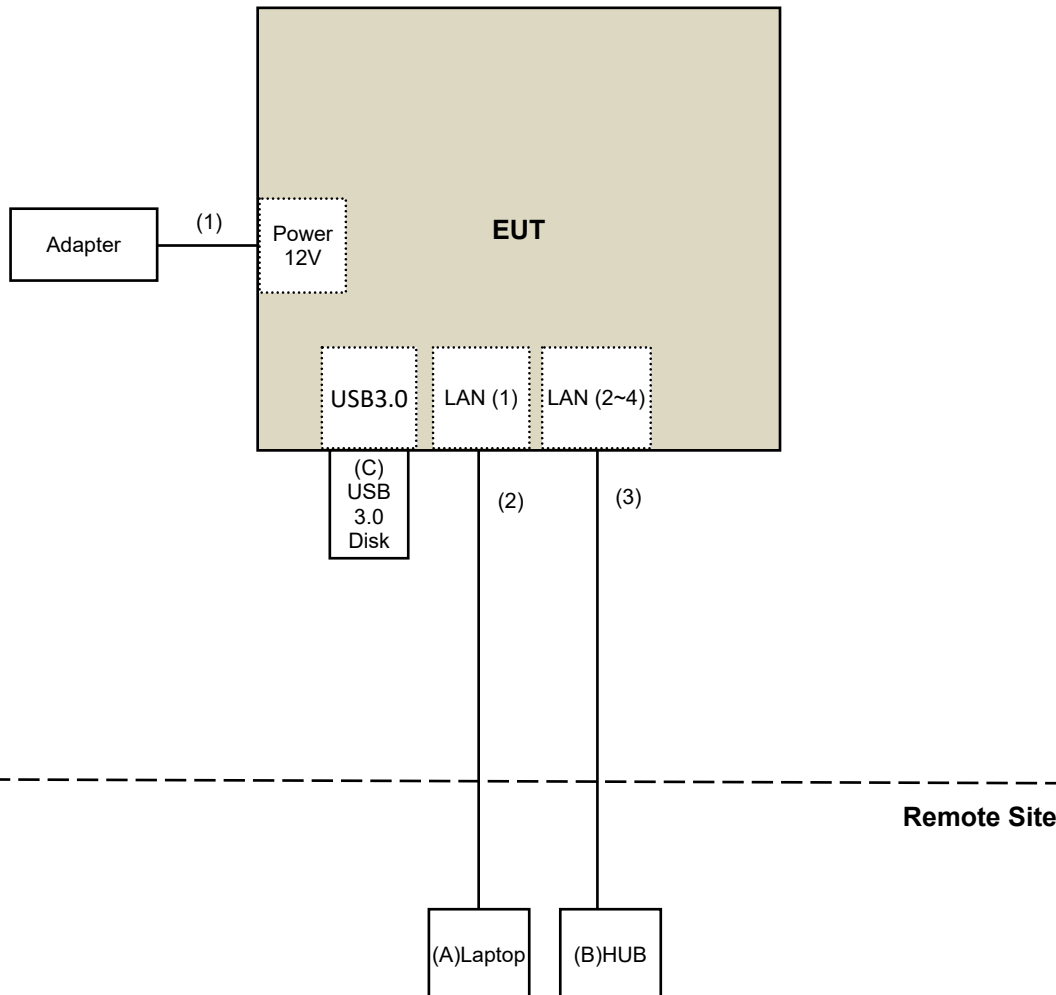
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	Lenovo	81A4	YD02YN76	PD93165NGU	Provided by Lab
B.	HUB	ZyXEL	GS1100-16	S150H44000046	DoC	Provided by Lab
C.	USB 3.0 Disk	SanDisk	Ultra Flair USB 3.0	NA	NA	Provided by Lab

Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	No	0	Supplied by client
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ-45 Cable	3	10	No	0	Provided by Lab

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test Standard:

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

References Test Guidance:

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBµV/m)	AV:54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*4}
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK:105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK:122.2 (dBµV/m) ^{*4}
^{*1} beyond 75 MHz or more above of the band edge.		^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

4.1.2 Test Instruments

For Radiated Emission test: (Above 1GHz)

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-1200	160922	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 09, 2020	June 08, 2021
RF Cable	EMC104-SM-SM-6000	180602	June 09, 2020	June 08, 2021
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Tested Date: July 02, 2020

For other Radiated Emission and Bandedge test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 03, 2019	July 02, 2020
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Feb. 18, 2020	Feb. 17, 2021
RF Cable	NA	LOOPCAB-001	Jan. 08, 2020	Jan. 07, 2021
RF Cable	NA	LOOPCAB-002	Jan. 08, 2020	Jan. 07, 2021
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-05	Apr. 28, 2020	Apr. 27, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 11, 2019	Nov. 10, 2020
RF Cable	8D	966-3-1	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-2	Mar. 17, 2020	Mar. 16, 2021
RF Cable	8D	966-3-3	Mar. 17, 2020	Mar. 16, 2021
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 26, 2019	Sep. 25, 2020
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 24, 2019	Nov. 23, 2020
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-1200	160922	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 09, 2020	June 08, 2021
RF Cable	EMC104-SM-SM-6000	180602	June 09, 2020	June 08, 2021
Spectrum Analyzer Keysight	N9030A	MY54490679	July 17, 2019	July 16, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 15, 2020	Jan. 14, 2021
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 24, 2019	Nov. 23, 2020
RF Cable	EMC102-KM-KM-1200	160924	Jan. 15, 2020	Jan. 14, 2021
RF Cable	EMC-KM-KM-4000	200214	Mar. 11, 2020	Mar. 10, 2021
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Tested Date: June 23 to 25, 2020

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 16, 2020	Jan. 15, 2021
True RMS Clamp Meter FLUKE	325	31130711WS	June 06, 2020	June 05, 2021
Voltage Meter FLUKE	179	89610322	Sep. 25, 2019	Sep. 24, 2020
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

- NOTE:**
1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: Aug. 05 to 06, 2020

4.1.3 Test Procedure

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

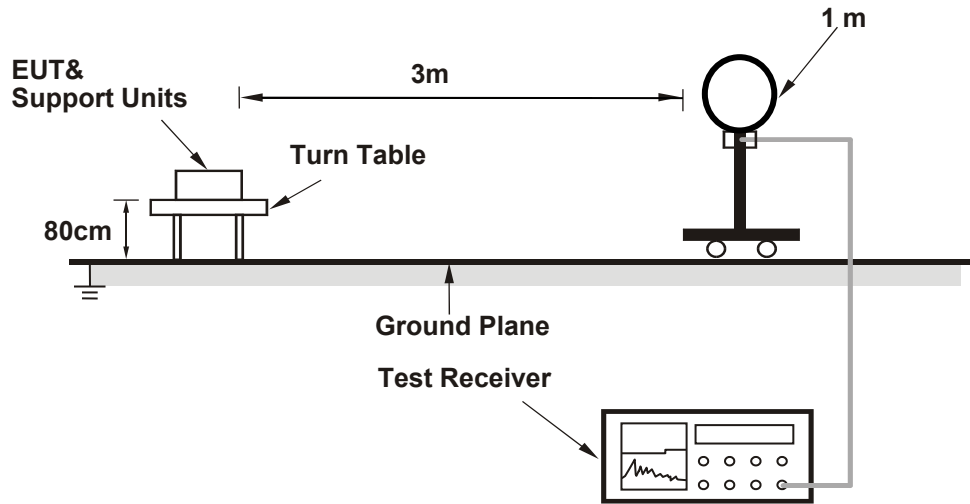
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

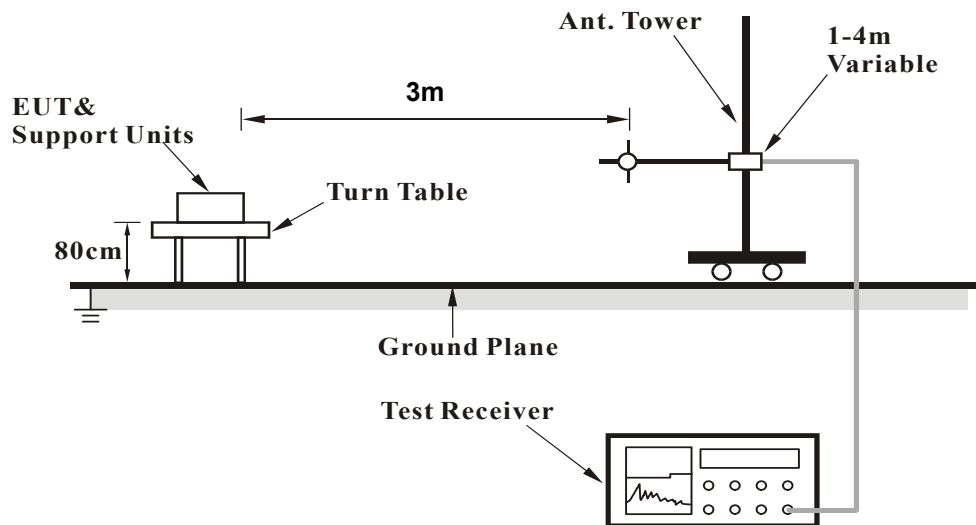
No deviation.

4.1.5 Test Setup

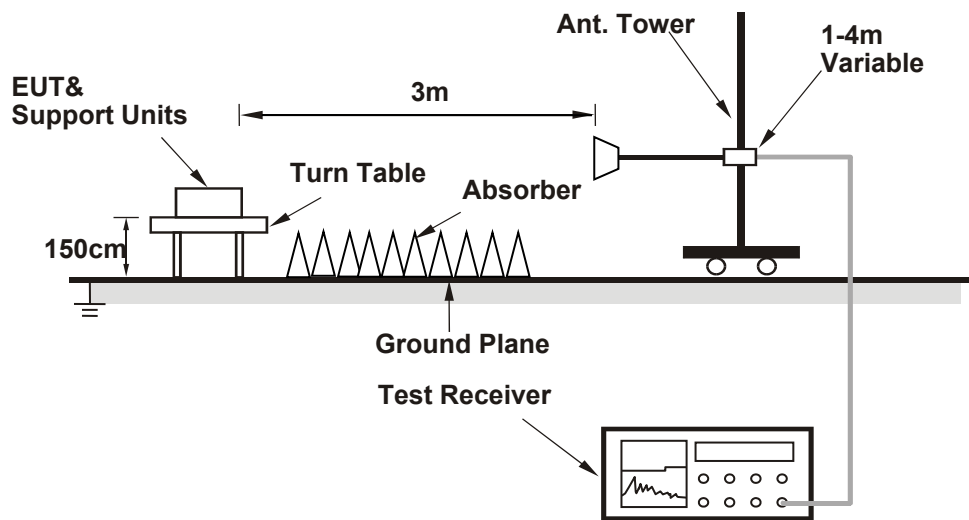
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Condition

- a. Placed the EUT on the testing table.
- b. Controlling software (QDART-Connectivity1.0-00074.1) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

CDD Mode
Above 1GHz Data:
802.11a

Channel	TX Channel 52	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5260.00	115.4 PK			1.50 H	86	112.0	3.4
2	*5260.00	107.1 AV			1.50 H	86	103.7	3.4
3	5350.00	48.8 PK	74.0	-25.2	1.50 H	86	45.4	3.4
4	5350.00	40.2 AV	54.0	-13.8	1.50 H	86	36.8	3.4
5	#10520.00	48.9 PK	68.2	-19.3	1.70 H	326	35.8	13.1
6	15780.00	58.4 PK	74.0	-15.6	1.90 H	360	44.9	13.5
7	15780.00	47.4 AV	54.0	-6.6	1.90 H	360	33.9	13.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5075.00	52.1 PK	74.0	-21.9	1.50 V	130	48.5	3.6
2	5075.00	44.3 AV	54.0	-9.7	1.50 V	130	40.7	3.6
3	*5260.00	116.3 PK			1.50 V	130	112.9	3.4
4	*5260.00	108.5 AV			1.50 V	130	105.1	3.4
5	5350.00	49.3 PK	74.0	-24.7	1.50 V	130	45.9	3.4
6	5350.00	40.9 AV	54.0	-13.1	1.50 V	130	37.5	3.4
7	#10520.00	49.3 PK	68.2	-18.9	1.54 V	0	36.2	13.1
8	15780.00	48.8 PK	74.0	-25.2	1.93 V	249	35.3	13.5
9	15780.00	39.6 AV	54.0	-14.4	1.93 V	249	26.1	13.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

Channel	TX Channel 60	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	115.0 PK			1.53 H	93	111.7	3.3
2	*5300.00	106.7 AV			1.53 H	93	103.4	3.3
3	5350.00	53.6 PK	74.0	-20.4	1.53 H	93	50.2	3.4
4	5350.00	44.5 AV	54.0	-9.5	1.53 H	93	41.1	3.4
5	10600.00	48.7 PK	74.0	-25.3	1.70 H	322	35.8	12.9
6	10600.00	39.6 AV	54.0	-14.4	1.70 H	322	26.7	12.9
7	15900.00	58.6 PK	74.0	-15.4	1.88 H	360	45.8	12.8
8	15900.00	47.7 AV	54.0	-6.3	1.88 H	360	34.9	12.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	115.5 PK			1.33 V	137	112.2	3.3
2	*5300.00	107.6 AV			1.33 V	137	104.3	3.3
3	5350.00	58.0 PK	74.0	-16.0	1.33 V	137	54.6	3.4
4	5350.00	47.8 AV	54.0	-6.2	1.33 V	137	44.4	3.4
5	10600.00	49.6 PK	74.0	-24.4	1.56 V	12	36.7	12.9
6	10600.00	40.3 AV	54.0	-13.7	1.56 V	12	27.4	12.9
7	15900.00	49.2 PK	74.0	-24.8	1.90 V	260	36.4	12.8
8	15900.00	39.8 AV	54.0	-14.2	1.90 V	260	27.0	12.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

Channel	TX Channel 64	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	112.0 PK			1.47 H	91	108.6	3.4
2	*5320.00	103.8 AV			1.47 H	91	100.4	3.4
3	5350.00	63.7 PK	74.0	-10.3	1.47 H	91	60.3	3.4
4	5350.00	51.7 AV	54.0	-2.3	1.47 H	91	48.3	3.4
5	10640.00	48.6 PK	74.0	-25.4	1.72 H	333	35.7	12.9
6	10640.00	39.3 AV	54.0	-14.7	1.72 H	333	26.4	12.9
7	15960.00	58.8 PK	74.0	-15.2	1.87 H	360	46.0	12.8
8	15960.00	48.2 AV	54.0	-5.8	1.87 H	360	35.4	12.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	114.4 PK			1.51 V	131	111.0	3.4
2	*5320.00	105.7 AV			1.51 V	131	102.3	3.4
3	5350.00	68.1 PK	74.0	-5.9	1.51 V	131	64.7	3.4
4	5350.00	53.7 AV	54.0	-0.3	1.51 V	131	50.3	3.4
5	10640.00	49.5 PK	74.0	-24.5	1.52 V	24	36.6	12.9
6	10640.00	40.5 AV	54.0	-13.5	1.52 V	24	27.6	12.9
7	15960.00	49.3 PK	74.0	-24.7	1.96 V	268	36.5	12.8
8	15960.00	40.1 AV	54.0	-13.9	1.96 V	268	27.3	12.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

Channel	TX Channel 100	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5455.34	55.9 PK	74.0	-18.1	1.49 H	310	52.1	3.8
2	5455.34	45.3 AV	54.0	-8.7	1.49 H	310	41.5	3.8
3	#5468.61	67.6 PK	68.2	-0.6	1.49 H	310	63.7	3.9
4	*5500.00	116.6 PK			1.49 H	310	112.7	3.9
5	*5500.00	109.2 AV			1.49 H	310	105.3	3.9
6	11000.00	48.5 PK	74.0	-25.5	1.63 H	337	35.5	13.0
7	11000.00	38.9 AV	54.0	-15.1	1.63 H	337	25.9	13.0
8	#16500.00	57.9 PK	68.2	-10.3	1.86 H	360	43.3	14.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	58.4 PK	74.0	-15.6	1.55 V	355	54.6	3.8
2	5460.00	45.4 AV	54.0	-8.6	1.55 V	355	41.6	3.8
3	#5467.18	67.8 PK	68.2	-0.4	1.55 V	355	63.9	3.9
4	*5500.00	116.1 PK			1.55 V	355	112.2	3.9
5	*5500.00	108.9 AV			1.55 V	355	105.0	3.9
6	11000.00	49.8 PK	74.0	-24.2	1.58 V	8	36.8	13.0
7	11000.00	40.4 AV	54.0	-13.6	1.58 V	8	27.4	13.0
8	#16500.00	49.5 PK	68.2	-18.7	1.80 V	269	34.9	14.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 116	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	119.9 PK			1.45 H	311	116.1	3.8
2	*5580.00	112.3 AV			1.45 H	311	108.5	3.8
3	11160.00	48.7 PK	74.0	-25.3	1.67 H	336	35.6	13.1
4	11160.00	39.3 AV	54.0	-14.7	1.67 H	336	26.2	13.1
5	#16740.00	58.1 PK	68.2	-10.1	1.86 H	360	41.9	16.2

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	119.7 PK			1.61 V	354	115.9	3.8
2	*5580.00	111.9 AV			1.61 V	354	108.1	3.8
3	11160.00	49.7 PK	74.0	-24.3	1.59 V	20	36.6	13.1
4	11160.00	40.2 AV	54.0	-13.8	1.59 V	20	27.1	13.1
5	#16740.00	49.8 PK	68.2	-18.4	1.85 V	265	33.6	16.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 140	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	116.4 PK			1.53 H	317	112.4	4.0
2	*5700.00	108.3 AV			1.53 H	317	104.3	4.0
3	#5725.00	65.6 PK	68.2	-2.6	1.53 H	317	61.6	4.0
4	11400.00	48.3 PK	74.0	-25.7	1.69 H	326	35.1	13.2
5	11400.00	39.1 AV	54.0	-14.9	1.69 H	326	25.9	13.2
6	#17100.00	58.9 PK	68.2	-9.3	1.80 H	360	41.7	17.2

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	118.3 PK			1.54 V	350	114.3	4.0
2	*5700.00	110.5 AV			1.54 V	350	106.5	4.0
3	#5725.00	67.2 PK	68.2	-1.0	1.54 V	350	63.2	4.0
4	11400.00	49.7 PK	74.0	-24.3	1.60 V	9	36.5	13.2
5	11400.00	40.2 AV	54.0	-13.8	1.60 V	9	27.0	13.2
6	#17100.00	49.6 PK	68.2	-18.6	1.83 V	270	32.4	17.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 144	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.8 PK	74.0	-22.2	1.54 H	324	48.0	3.8
2	5460.00	42.5 AV	54.0	-11.5	1.54 H	324	38.7	3.8
3	#5470.00	52.9 PK	68.2	-15.3	1.54 H	324	49.0	3.9
4	*5720.00	117.8 PK			1.54 H	324	113.9	3.9
5	*5720.00	109.5 AV			1.54 H	324	105.6	3.9
6	#5850.00	53.2 PK	68.2	-15.0	1.54 H	324	48.8	4.4
7	11440.00	49.4 PK	74.0	-24.6	1.67 H	323	36.1	13.3
8	11440.00	39.8 AV	54.0	-14.2	1.67 H	323	26.5	13.3
9	#17160.00	58.1 PK	68.2	-10.1	1.84 H	360	40.7	17.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.3 PK	74.0	-22.7	1.53 V	351	47.5	3.8
2	5460.00	42.0 AV	54.0	-12.0	1.53 V	351	38.2	3.8
3	#5470.00	52.8 PK	68.2	-15.4	1.53 V	351	48.9	3.9
4	*5720.00	119.4 PK			1.53 V	351	115.5	3.9
5	*5720.00	111.5 AV			1.53 V	351	107.6	3.9
6	#5850.00	53.0 PK	68.2	-15.2	1.53 V	351	48.6	4.4
7	11440.00	50.3 PK	74.0	-23.7	1.54 V	28	37.0	13.3
8	11440.00	40.6 AV	54.0	-13.4	1.54 V	28	27.3	13.3
9	#17160.00	49.8 PK	68.2	-18.4	1.88 V	277	32.4	17.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ax (HE20)

Channel	TX Channel 52	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5066.74	51.8 PK	74.0	-22.2	1.53 H	80	48.2	3.6
2	5066.74	42.4 AV	54.0	-11.6	1.53 H	80	38.8	3.6
3	*5260.00	116.4 PK			1.53 H	80	113.0	3.4
4	*5260.00	106.2 AV			1.53 H	80	102.8	3.4
5	5350.00	49.2 PK	74.0	-24.8	1.53 H	80	45.8	3.4
6	5350.00	39.5 AV	54.0	-14.5	1.53 H	80	36.1	3.4
7	#10520.00	48.4 PK	68.2	-19.8	1.65 H	313	35.3	13.1
8	15780.00	58.6 PK	74.0	-15.4	1.91 H	360	45.1	13.5
9	15780.00	47.6 AV	54.0	-6.4	1.91 H	360	34.1	13.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5070.24	51.5 PK	74.0	-22.5	1.48 V	134	47.9	3.6
2	5070.24	43.3 AV	54.0	-10.7	1.48 V	134	39.7	3.6
3	*5260.00	117.1 PK			1.48 V	134	113.7	3.4
4	*5260.00	107.5 AV			1.48 V	134	104.1	3.4
5	5350.00	49.3 PK	74.0	-24.7	1.48 V	134	45.9	3.4
6	5350.00	40.3 AV	54.0	-13.7	1.48 V	134	36.9	3.4
7	#10520.00	49.7 PK	68.2	-18.5	1.50 V	25	36.6	13.1
8	15780.00	49.2 PK	74.0	-24.8	1.96 V	247	35.7	13.5
9	15780.00	39.6 AV	54.0	-14.4	1.96 V	247	26.1	13.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 60	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	116.0 PK			1.49 H	96	112.7	3.3
2	*5300.00	105.8 AV			1.49 H	96	102.5	3.3
3	5350.00	57.5 PK	74.0	-16.5	1.49 H	96	54.1	3.4
4	5350.00	46.8 AV	54.0	-7.2	1.49 H	96	43.4	3.4
5	10600.00	48.3 PK	74.0	-25.7	1.74 H	311	35.4	12.9
6	10600.00	39.5 AV	54.0	-14.5	1.74 H	311	26.6	12.9
7	15900.00	58.3 PK	74.0	-15.7	1.94 H	360	45.5	12.8
8	15900.00	47.6 AV	54.0	-6.4	1.94 H	360	34.8	12.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	115.7 PK			1.23 V	141	112.4	3.3
2	*5300.00	105.8 AV			1.23 V	141	102.5	3.3
3	5350.00	61.5 PK	74.0	-12.5	1.23 V	141	58.1	3.4
4	5350.00	50.2 AV	54.0	-3.8	1.23 V	141	46.8	3.4
5	10600.00	48.9 PK	74.0	-25.1	1.50 V	6	36.0	12.9
6	10600.00	39.9 AV	54.0	-14.1	1.50 V	6	27.0	12.9
7	15900.00	49.2 PK	74.0	-24.8	1.85 V	266	36.4	12.8
8	15900.00	39.8 AV	54.0	-14.2	1.85 V	266	27.0	12.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

Channel	TX Channel 64	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	112.4 PK			2.92 H	82	109.0	3.4
2	*5320.00	102.7 AV			2.92 H	82	99.3	3.4
3	5350.00	63.8 PK	74.0	-10.2	2.92 H	82	60.4	3.4
4	5350.00	53.5 AV	54.0	-0.5	2.92 H	82	50.1	3.4
5	10640.00	48.4 PK	74.0	-25.6	1.69 H	314	35.5	12.9
6	10640.00	39.4 AV	54.0	-14.6	1.69 H	314	26.5	12.9
7	15960.00	58.1 PK	74.0	-15.9	1.83 H	360	45.3	12.8
8	15960.00	47.3 AV	54.0	-6.7	1.83 H	360	34.5	12.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	113.6 PK			1.50 V	150	110.2	3.4
2	*5320.00	103.1 AV			1.50 V	150	99.7	3.4
3	5352.82	62.4 PK	74.0	-11.6	1.50 V	150	59.0	3.4
4	5352.82	52.0 AV	54.0	-2.0	1.50 V	150	48.6	3.4
5	10640.00	50.0 PK	74.0	-24.0	1.51 V	7	37.1	12.9
6	10640.00	40.7 AV	54.0	-13.3	1.51 V	7	27.8	12.9
7	15960.00	49.1 PK	74.0	-24.9	1.90 V	255	36.3	12.8
8	15960.00	39.9 AV	54.0	-14.1	1.90 V	255	27.1	12.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

Channel	TX Channel 100	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5459.52	67.7 PK	74.0	-6.3	1.52 H	326	63.9	3.8
2	5459.52	51.3 AV	54.0	-2.7	1.52 H	326	47.5	3.8
3	#5466.20	66.2 PK	68.2	-2.0	1.52 H	326	62.3	3.9
4	*5500.00	119.5 PK			1.52 H	326	115.6	3.9
5	*5500.00	109.9 AV			1.52 H	326	106.0	3.9
6	11000.00	48.1 PK	74.0	-25.9	1.70 H	325	35.1	13.0
7	11000.00	38.9 AV	54.0	-15.1	1.70 H	325	25.9	13.0
8	#16500.00	58.2 PK	68.2	-10.0	1.88 H	360	43.6	14.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5458.76	63.9 PK	74.0	-10.1	1.50 V	354	60.1	3.8
2	5458.76	51.6 AV	54.0	-2.4	1.50 V	354	47.8	3.8
3	#5460.71	67.5 PK	68.2	-0.7	1.50 V	354	63.7	3.8
4	*5500.00	119.4 PK			1.50 V	354	115.5	3.9
5	*5500.00	109.1 AV			1.50 V	354	105.2	3.9
6	11000.00	49.2 PK	74.0	-24.8	1.59 V	25	36.2	13.0
7	11000.00	39.7 AV	54.0	-14.3	1.59 V	25	26.7	13.0
8	#16500.00	50.3 PK	68.2	-17.9	1.83 V	268	35.7	14.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 116	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	120.7 PK			1.45 H	310	116.9	3.8
2	*5580.00	110.8 AV			1.45 H	310	107.0	3.8
3	11160.00	48.7 PK	74.0	-25.3	1.61 H	321	35.6	13.1
4	11160.00	39.1 AV	54.0	-14.9	1.61 H	321	26.0	13.1
5	#16740.00	57.7 PK	68.2	-10.5	1.89 H	360	41.5	16.2

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	120.4 PK			1.49 V	358	116.6	3.8
2	*5580.00	110.5 AV			1.49 V	358	106.7	3.8
3	11160.00	50.1 PK	74.0	-23.9	1.56 V	16	37.0	13.1
4	11160.00	40.6 AV	54.0	-13.4	1.56 V	16	27.5	13.1
5	#16740.00	50.1 PK	68.2	-18.1	1.83 V	259	33.9	16.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

Channel	TX Channel 140	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	117.3 PK			1.45 H	323	113.3	4.0
2	*5700.00	107.8 AV			1.45 H	323	103.8	4.0
3	#5725.00	66.3 PK	68.2	-1.9	1.45 H	323	62.3	4.0
4	11400.00	48.8 PK	74.0	-25.2	1.71 H	343	35.6	13.2
5	11400.00	39.2 AV	54.0	-14.8	1.71 H	343	26.0	13.2
6	#17100.00	58.0 PK	68.2	-10.2	1.88 H	360	40.8	17.2

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	117.7 PK			1.56 V	351	113.7	4.0
2	*5700.00	106.8 AV			1.56 V	351	102.8	4.0
3	#5725.00	67.4 PK	68.2	-0.8	1.56 V	351	63.4	4.0
4	11400.00	49.2 PK	74.0	-24.8	1.61 V	5	36.0	13.2
5	11400.00	39.9 AV	54.0	-14.1	1.61 V	5	26.7	13.2
6	#17100.00	49.8 PK	68.2	-18.4	1.81 V	268	32.6	17.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 144	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.1 PK	74.0	-22.9	1.47 H	323	47.3	3.8
2	5460.00	42.0 AV	54.0	-12.0	1.47 H	323	38.2	3.8
3	#5470.00	52.7 PK	68.2	-15.5	1.47 H	323	48.8	3.9
4	*5720.00	120.9 PK			1.47 H	323	117.0	3.9
5	*5720.00	111.0 AV			1.47 H	323	107.1	3.9
6	#5850.00	52.7 PK	68.2	-15.5	1.47 H	323	48.3	4.4
7	11440.00	48.3 PK	74.0	-25.7	1.69 H	334	35.0	13.3
8	11440.00	39.0 AV	54.0	-15.0	1.69 H	334	25.7	13.3
9	#17160.00	57.8 PK	68.2	-10.4	1.89 H	360	40.4	17.4

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.3 PK	74.0	-22.7	1.59 V	360	47.5	3.8
2	5460.00	41.8 AV	54.0	-12.2	1.59 V	360	38.0	3.8
3	#5470.00	53.0 PK	68.2	-15.2	1.59 V	360	49.1	3.9
4	*5720.00	120.6 PK			1.59 V	360	116.7	3.9
5	*5720.00	110.8 AV			1.59 V	360	106.9	3.9
6	#5850.00	53.4 PK	68.2	-14.8	1.59 V	360	49.0	4.4
7	11440.00	49.6 PK	74.0	-24.4	1.58 V	10	36.3	13.3
8	11440.00	40.1 AV	54.0	-13.9	1.58 V	10	26.8	13.3
9	#17160.00	49.2 PK	68.2	-19.0	1.79 V	258	31.8	17.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ax (HE40)

Channel	TX Channel 54	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5270.00	113.9 PK			1.50 H	86	110.5	3.4
2	*5270.00	102.9 AV			1.50 H	86	99.5	3.4
3	5353.44	61.3 PK	74.0	-12.7	1.50 H	86	57.9	3.4
4	5353.44	48.9 AV	54.0	-5.1	1.50 H	86	45.5	3.4
5	#10540.00	48.7 PK	68.2	-19.5	1.72 H	322	35.7	13.0
6	15810.00	58.9 PK	74.0	-15.1	1.92 H	360	45.7	13.2
7	15810.00	47.8 AV	54.0	-6.2	1.92 H	360	34.6	13.2

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5270.00	114.9 PK			1.40 V	133	111.5	3.4
2	*5270.00	104.2 AV			1.40 V	133	100.8	3.4
3	5350.00	62.8 PK	74.0	-11.2	1.40 V	133	59.4	3.4
4	5350.00	52.0 AV	54.0	-2.0	1.40 V	133	48.6	3.4
5	#10540.00	49.9 PK	68.2	-18.3	1.58 V	2	36.9	13.0
6	15810.00	49.6 PK	74.0	-24.4	1.90 V	246	36.4	13.2
7	15810.00	40.2 AV	54.0	-13.8	1.90 V	246	27.0	13.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 62	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	108.2 PK			1.47 H	182	104.9	3.3
2	*5310.00	97.0 AV			1.47 H	182	93.7	3.3
3	5350.00	62.0 PK	74.0	-12.0	1.47 H	182	58.6	3.4
4	5350.00	50.4 AV	54.0	-3.6	1.47 H	182	47.0	3.4
5	10620.00	48.0 PK	74.0	-26.0	1.75 H	324	35.1	12.9
6	10620.00	39.2 AV	54.0	-14.8	1.75 H	324	26.3	12.9
7	15930.00	58.7 PK	74.0	-15.3	1.90 H	360	45.9	12.8
8	15930.00	47.6 AV	54.0	-6.4	1.90 H	360	34.8	12.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	110.5 PK			1.52 V	137	107.2	3.3
2	*5310.00	100.2 AV			1.52 V	137	96.9	3.3
3	5353.68	68.1 PK	74.0	-5.9	1.52 V	137	64.7	3.4
4	5353.68	52.5 AV	54.0	-1.5	1.52 V	137	49.1	3.4
5	10620.00	49.6 PK	74.0	-24.4	1.58 V	0	36.7	12.9
6	10620.00	40.2 AV	54.0	-13.8	1.58 V	0	27.3	12.9
7	15930.00	50.0 PK	74.0	-24.0	1.86 V	252	37.2	12.8
8	15930.00	40.3 AV	54.0	-13.7	1.86 V	252	27.5	12.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

Channel	TX Channel 102	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	61.5 PK	74.0	-12.5	1.72 H	308	57.7	3.8
2	5460.00	50.7 AV	54.0	-3.3	1.72 H	308	46.9	3.8
3	#5464.30	64.5 PK	68.2	-3.7	1.72 H	308	60.6	3.9
4	*5510.00	114.3 PK			1.72 H	308	110.4	3.9
5	*5510.00	104.5 AV			1.72 H	308	100.6	3.9
6	11020.00	48.4 PK	74.0	-25.6	1.63 H	329	35.4	13.0
7	11020.00	38.8 AV	54.0	-15.2	1.63 H	329	25.8	13.0
8	#16530.00	58.8 PK	68.2	-9.4	1.82 H	360	44.1	14.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5446.75	57.3 PK	74.0	-16.7	1.40 V	357	53.6	3.7
2	5446.75	43.9 AV	54.0	-10.1	1.40 V	357	40.2	3.7
3	#5470.00	67.6 PK	68.2	-0.6	1.40 V	357	63.7	3.9
4	*5510.00	112.9 PK			1.40 V	357	109.0	3.9
5	*5510.00	103.0 AV			1.40 V	357	99.1	3.9
6	11020.00	50.1 PK	74.0	-23.9	1.65 V	11	37.1	13.0
7	11020.00	40.4 AV	54.0	-13.6	1.65 V	11	27.4	13.0
8	#16530.00	50.3 PK	68.2	-17.9	1.85 V	252	35.6	14.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 110	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	65.8 PK	68.2	-2.4	1.52 H	313	61.9	3.9
2	*5550.00	118.6 PK			1.52 H	313	114.8	3.8
3	*5550.00	109.9 AV			1.52 H	313	106.1	3.8
4	11100.00	46.8 PK	74.0	-27.2	1.63 H	329	33.8	13.0
5	11100.00	37.5 AV	54.0	-16.5	1.63 H	329	24.5	13.0
6	#16650.00	57.5 PK	68.2	-10.7	1.82 H	360	41.8	15.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	65.0 PK	68.2	-3.2	1.47 V	354	61.1	3.9
2	*5550.00	117.8 PK			1.47 V	354	114.0	3.8
3	*5550.00	109.2 AV			1.47 V	354	105.4	3.8
4	11100.00	50.2 PK	74.0	-23.8	1.56 V	28	37.2	13.0
5	11100.00	40.6 AV	54.0	-13.4	1.56 V	28	27.6	13.0
6	#16650.00	49.4 PK	68.2	-18.8	1.89 V	271	33.7	15.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 134	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	115.4 PK			1.52 H	308	111.4	4.0
2	*5670.00	106.8 AV			1.52 H	308	102.8	4.0
3	#5725.00	65.0 PK	68.2	-3.2	1.52 H	308	61.0	4.0
4	11340.00	48.3 PK	74.0	-25.7	1.66 H	337	35.1	13.2
5	11340.00	39.2 AV	54.0	-14.8	1.66 H	337	26.0	13.2
6	#17010.00	57.9 PK	68.2	-10.3	1.91 H	360	40.9	17.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	116.4 PK			1.90 V	350	112.4	4.0
2	*5670.00	106.7 AV			1.90 V	350	102.7	4.0
3	#5725.00	67.9 PK	68.2	-0.3	1.90 V	350	63.9	4.0
4	11340.00	49.8 PK	74.0	-24.2	1.60 V	15	36.6	13.2
5	11340.00	40.3 AV	54.0	-13.7	1.60 V	15	27.1	13.2
6	#17010.00	49.8 PK	68.2	-18.4	1.88 V	267	32.8	17.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

Channel	TX Channel 142	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.5 PK	74.0	-22.5	1.48 H	308	47.7	3.8
2	5460.00	41.2 AV	54.0	-12.8	1.48 H	308	37.4	3.8
3	#5470.00	52.0 PK	68.2	-16.2	1.48 H	308	48.1	3.9
4	*5710.00	118.9 PK			1.48 H	308	114.9	4.0
5	*5710.00	108.6 AV			1.48 H	308	104.6	4.0
6	#5850.00	53.8 PK	68.2	-14.4	1.48 H	308	49.4	4.4
7	11420.00	48.5 PK	74.0	-25.5	1.69 H	334	35.3	13.2
8	11420.00	39.1 AV	54.0	-14.9	1.69 H	334	25.9	13.2
9	#17130.00	58.6 PK	68.2	-9.6	1.80 H	360	41.4	17.2

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.4 PK	74.0	-22.6	1.51 V	360	47.6	3.8
2	5460.00	41.0 AV	54.0	-13.0	1.51 V	360	37.2	3.8
3	#5470.00	52.2 PK	68.2	-16.0	1.51 V	360	48.3	3.9
4	*5710.00	118.0 PK			1.51 V	360	114.0	4.0
5	*5710.00	108.1 AV			1.51 V	360	104.1	4.0
6	#5850.00	53.8 PK	68.2	-14.4	1.51 V	360	49.4	4.4
7	11420.00	49.4 PK	74.0	-24.6	1.59 V	18	36.2	13.2
8	11420.00	40.1 AV	54.0	-13.9	1.59 V	18	26.9	13.2
9	#17130.00	49.9 PK	68.2	-18.3	1.80 V	281	32.7	17.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ax (HE80)

Channel	TX Channel 58	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.0 PK	74.0	-20.0	1.67 H	88	50.3	3.7
2	5150.00	44.4 AV	54.0	-9.6	1.67 H	88	40.7	3.7
3	*5290.00	106.1 PK			1.67 H	88	102.8	3.3
4	*5290.00	96.2 AV			1.67 H	88	92.9	3.3
5	5350.51	63.9 PK	74.0	-10.1	1.67 H	88	60.5	3.4
6	5350.51	50.8 AV	54.0	-3.2	1.67 H	88	47.4	3.4
7	#10580.00	48.6 PK	68.2	-19.6	1.75 H	331	35.7	12.9
8	15870.00	58.3 PK	74.0	-15.7	1.93 H	360	45.4	12.9
9	15870.00	47.4 AV	54.0	-6.6	1.93 H	360	34.5	12.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	56.4 PK	74.0	-17.6	1.49 V	133	52.7	3.7
2	5150.00	45.3 AV	54.0	-8.7	1.49 V	133	41.6	3.7
3	*5290.00	107.8 PK			1.49 V	133	104.5	3.3
4	*5290.00	97.9 AV			1.49 V	133	94.6	3.3
5	5353.78	67.0 PK	74.0	-7.0	1.49 V	133	63.6	3.4
6	5353.78	53.9 AV	54.0	-0.1	1.49 V	133	50.5	3.4
7	#10580.00	50.3 PK	68.2	-17.9	1.56 V	8	37.4	12.9
8	15870.00	48.9 PK	74.0	-25.1	1.95 V	256	36.0	12.9
9	15870.00	39.6 AV	54.0	-14.4	1.95 V	256	26.7	12.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 106	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	62.4 PK	74.0	-11.6	1.50 H	312	58.6	3.8
2	5460.00	53.7 AV	54.0	-0.3	1.50 H	312	49.9	3.8
3	#5461.23	63.4 PK	68.2	-4.8	1.50 H	312	59.6	3.8
4	*5530.00	109.8 PK			1.50 H	312	106.0	3.8
5	*5530.00	101.0 AV			1.50 H	312	97.2	3.8
6	#5725.00	52.1 PK	68.2	-16.1	1.50 H	312	48.1	4.0
7	11060.00	48.4 PK	74.0	-25.6	1.65 H	326	35.5	12.9
8	11060.00	38.9 AV	54.0	-15.1	1.65 H	326	26.0	12.9
9	#16590.00	57.5 PK	68.2	-10.7	1.91 H	360	42.6	14.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5456.82	64.5 PK	74.0	-9.5	1.90 V	351	60.7	3.8
2	5456.82	53.8 AV	54.0	-0.2	1.90 V	351	50.0	3.8
3	#5467.29	61.6 PK	68.2	-6.6	1.90 V	351	57.7	3.9
4	*5530.00	109.3 PK			1.90 V	351	105.5	3.8
5	*5530.00	100.3 AV			1.90 V	351	96.5	3.8
6	#5736.21	53.6 PK	68.2	-14.6	1.90 V	351	49.6	4.0
7	11060.00	49.5 PK	74.0	-24.5	1.57 V	29	36.6	12.9
8	11060.00	40.1 AV	54.0	-13.9	1.57 V	29	27.2	12.9
9	#16590.00	49.2 PK	68.2	-19.0	1.91 V	254	34.3	14.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Channel	TX Channel 122	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	115.3 PK			1.46 H	322	111.6	3.7
2	*5610.00	104.6 AV			1.46 H	322	100.9	3.7
3	#5725.00	66.8 PK	68.2	-1.4	1.46 H	322	62.8	4.0
4	11220.00	48.6 PK	74.0	-25.4	1.63 H	334	35.4	13.2
5	11220.00	39.0 AV	54.0	-15.0	1.63 H	334	25.8	13.2
6	#16830.00	57.6 PK	68.2	-10.6	1.88 H	360	41.5	16.1

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	114.9 PK			1.50 V	356	111.2	3.7
2	*5610.00	104.1 AV			1.50 V	356	100.4	3.7
3	#5725.00	67.5 PK	68.2	-0.7	1.50 V	356	63.5	4.0
4	11220.00	49.5 PK	74.0	-24.5	1.56 V	25	36.3	13.2
5	11220.00	39.9 AV	54.0	-14.1	1.56 V	25	26.7	13.2
6	#16830.00	49.1 PK	68.2	-19.1	1.82 V	272	33.0	16.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

Channel	TX Channel 138	Detector Function	Peak (PK)
Frequency Range	1GHz ~ 40GHz		Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	53.2 PK	74.0	-20.8	1.52 H	298	49.4	3.8
2	5460.00	45.0 AV	54.0	-9.0	1.52 H	298	41.2	3.8
3	#5470.00	55.7 PK	68.2	-12.5	1.52 H	298	51.8	3.9
4	*5690.00	117.9 PK			1.52 H	298	113.9	4.0
5	*5690.00	107.2 AV			1.52 H	298	103.2	4.0
6	#5850.00	67.0 PK	68.2	-1.2	1.52 H	298	62.6	4.4
7	11380.00	48.6 PK	74.0	-25.4	1.71 H	349	35.4	13.2
8	11380.00	39.2 AV	54.0	-14.8	1.71 H	349	26.0	13.2
9	#17070.00	58.6 PK	68.2	-9.6	1.91 H	360	41.6	17.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	53.4 PK	74.0	-20.6	1.90 V	349	49.6	3.8
2	5460.00	45.3 AV	54.0	-8.7	1.90 V	349	41.5	3.8
3	#5470.00	55.9 PK	68.2	-12.3	1.90 V	349	52.0	3.9
4	*5690.00	117.5 PK			1.90 V	349	113.5	4.0
5	*5690.00	106.9 AV			1.90 V	349	102.9	4.0
6	#5850.00	67.2 PK	68.2	-1.0	1.90 V	349	62.8	4.4
7	11380.00	49.8 PK	74.0	-24.2	1.57 V	13	36.6	13.2
8	11380.00	40.2 AV	54.0	-13.8	1.57 V	13	27.0	13.2
9	#17070.00	49.3 PK	68.2	-18.9	1.81 V	269	32.3	17.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Below 1GHz Data:

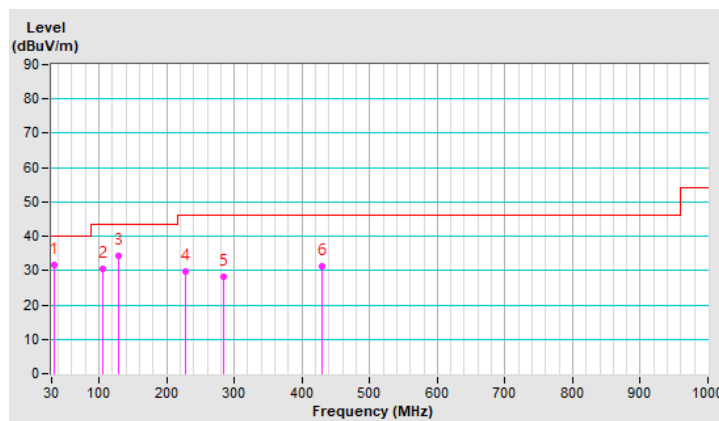
802.11ax (HE40)

Channel	TX Channel 54	Detector Function	Quasi-Peak (QP)
Frequency Range	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.09	31.8 QP	40.0	-8.2	2.50 H	48	40.6	-8.8
2	105.51	30.5 QP	43.5	-13.0	2.50 H	353	41.2	-10.7
3	128.03	34.3 QP	43.5	-9.2	1.50 H	125	42.6	-8.3
4	227.50	29.7 QP	46.0	-16.3	1.50 H	305	39.1	-9.4
5	284.74	28.3 QP	46.0	-17.7	1.00 H	316	34.7	-6.4
6	429.22	31.4 QP	46.0	-14.6	2.50 H	339	33.4	-2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



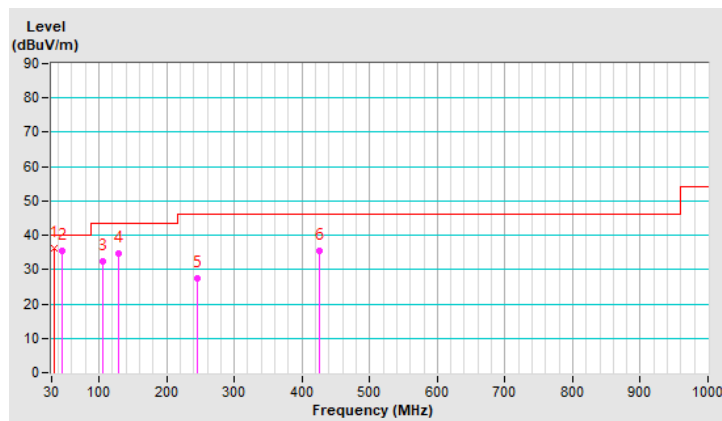
Channel	TX Channel 54	Detector Function	Quasi-Peak (QP)
Frequency Range	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.24	36.3 QP	40.0	-3.7	1.00 V	324	45.0	-8.7
2	44.92	35.4 QP	40.0	-4.6	1.00 V	28	43.1	-7.7
3	106.18	32.3 QP	43.5	-11.2	1.50 V	274	42.9	-10.6
4	127.98	34.7 QP	43.5	-8.8	1.00 V	89	43.0	-8.3
5	245.94	27.5 QP	46.0	-18.5	2.00 V	48	35.5	-8.0
6	426.12	35.5 QP	46.0	-10.5	1.50 V	152	37.5	-2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



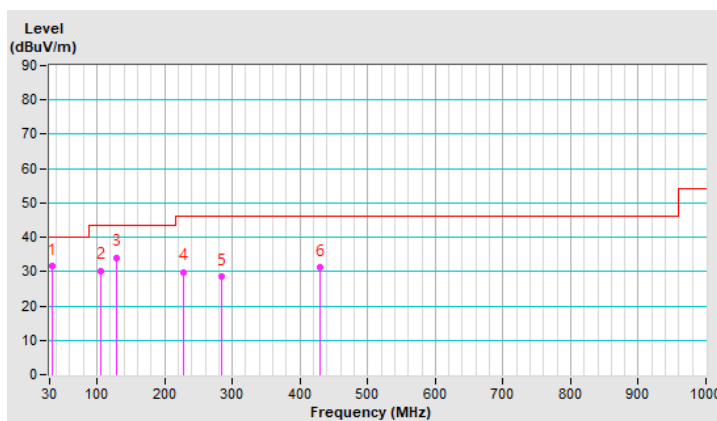
802.11ax (HE80)

Channel	TX Channel 122	Detector Function	Quasi-Peak (QP)
Frequency Range	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.12	31.6 QP	40.0	-8.4	2.50 H	35	40.4	-8.8
2	105.56	30.3 QP	43.5	-13.2	2.50 H	348	41.0	-10.7
3	128.10	34.1 QP	43.5	-9.4	1.50 H	116	42.4	-8.3
4	227.55	29.9 QP	46.0	-16.1	1.50 H	313	39.3	-9.4
5	284.79	28.5 QP	46.0	-17.5	1.00 H	331	34.9	-6.4
6	429.27	31.3 QP	46.0	-14.7	2.50 H	335	33.3	-2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



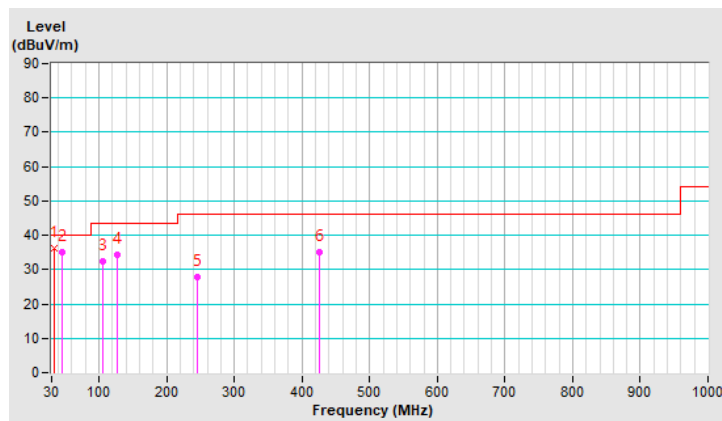
Channel	TX Channel 122	Detector Function	Quasi-Peak (QP)
Frequency Range	9kHz ~ 1GHz		

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.17	36.1 QP	40.0	-3.9	1.00 V	296	44.8	-8.7
2	44.86	35.2 QP	40.0	-4.8	1.00 V	48	42.9	-7.7
3	106.12	32.5 QP	43.5	-11.0	1.50 V	291	43.1	-10.6
4	127.93	34.2 QP	43.5	-9.3	1.00 V	67	42.5	-8.3
5	245.85	27.7 QP	46.0	-18.3	2.00 V	83	35.7	-8.0
6	426.02	35.1 QP	46.0	-10.9	1.50 V	167	37.1	-2.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 23, 2019	Oct. 22, 2020
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 19, 2020	Mar. 18, 2021
50 ohms Terminator	50	3	Oct. 23, 2019	Oct. 22, 2020
RF Cable	5D-FB	COCCAB-001	Sep. 27, 2019	Sep. 26, 2020
Fixed attenuator EMCI	STI02-2200-10	005	Aug. 30, 2019	Aug. 29, 2020
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
- 3 Tested Date: July 01, 2020

4.2.3 Test Procedure

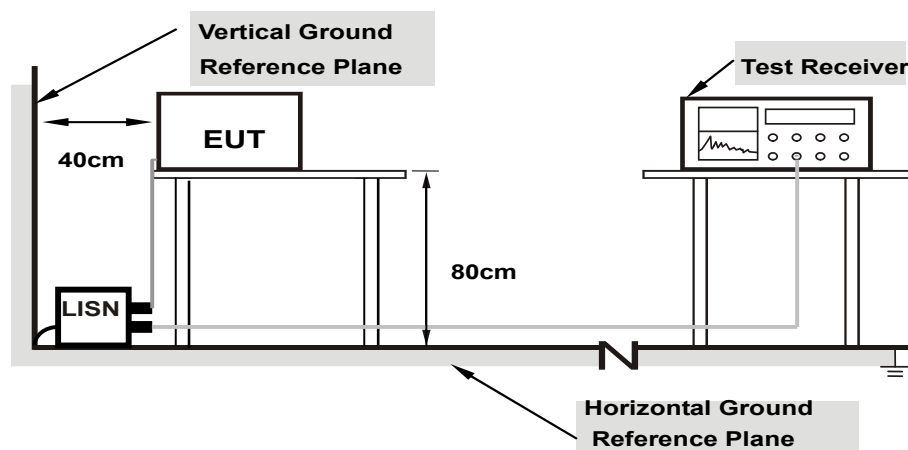
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

Note: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Condition

Same as 4.1.6.

4.2.7 Test Results

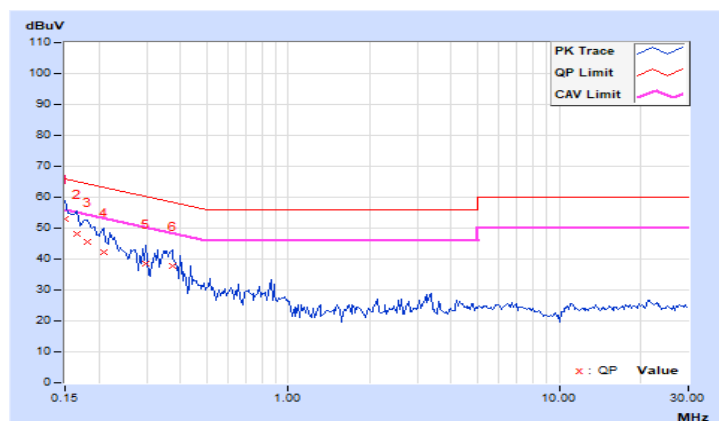
For Radio 2

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.98	42.92	29.56	52.90	39.54	66.00	56.00	-13.10	-16.46
2	0.16562	9.98	38.00	24.80	47.98	34.78	65.18	55.18	-17.20	-20.40
3	0.18125	9.99	35.61	22.38	45.60	32.37	64.43	54.43	-18.83	-22.06
4	0.20859	9.99	32.18	20.47	42.17	30.46	63.26	53.26	-21.09	-22.80
5	0.29844	10.00	28.35	19.83	38.35	29.83	60.29	50.29	-21.94	-20.46
6	0.37266	10.01	27.66	20.99	37.67	31.00	58.44	48.44	-20.77	-17.44

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

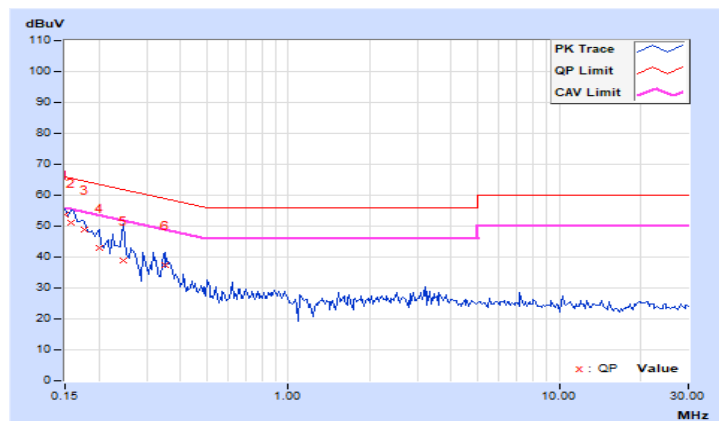


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	43.75	30.52	53.74	40.51	66.00	56.00	-12.26	-15.49
2	0.15781	9.99	41.12	26.80	51.11	36.79	65.58	55.58	-14.47	-18.79
3	0.17734	10.00	38.80	24.60	48.80	34.60	64.61	54.61	-15.81	-20.01
4	0.20078	10.00	33.08	20.43	43.08	30.43	63.58	53.58	-20.50	-23.15
5	0.24766	10.01	28.80	15.69	38.81	25.70	61.84	51.84	-23.03	-26.14
6	0.34922	10.02	27.56	21.39	37.58	31.41	58.98	48.98	-21.40	-17.57

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



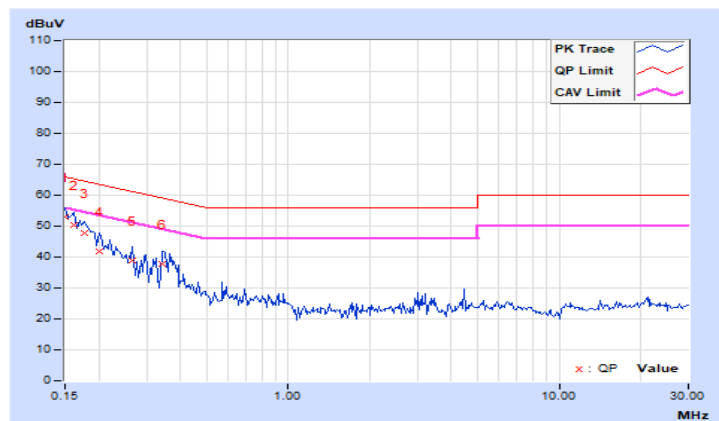
For Radio 3

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.98	42.82	29.44	52.80	39.42	66.00	56.00	-13.20	-16.58
2	0.16172	9.98	40.53	25.44	50.51	35.42	65.38	55.38	-14.87	-19.96
3	0.17734	9.99	37.78	24.02	47.77	34.01	64.61	54.61	-16.84	-20.60
4	0.20078	9.99	31.88	20.98	41.87	30.97	63.58	53.58	-21.71	-22.61
5	0.26719	10.00	28.95	20.25	38.95	30.25	61.20	51.20	-22.25	-20.95
6	0.34141	10.00	27.85	20.41	37.85	30.41	59.17	49.17	-21.32	-18.76

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

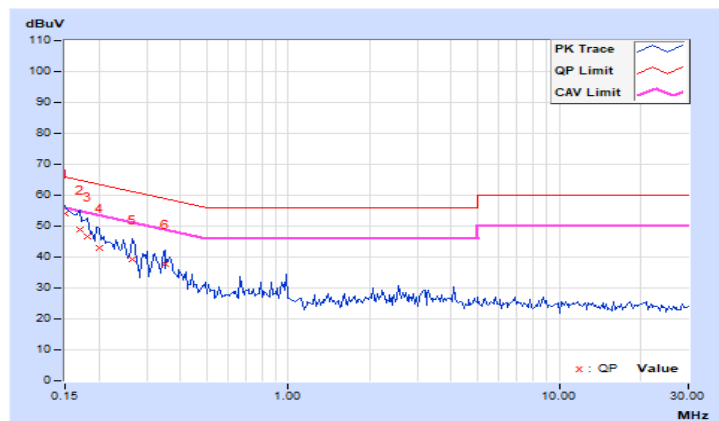


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	44.26	30.82	54.25	40.81	66.00	56.00	-11.75	-15.19
2	0.16953	9.99	38.94	25.46	48.93	35.45	64.98	54.98	-16.05	-19.53
3	0.18125	10.00	36.62	22.91	46.62	32.91	64.43	54.43	-17.81	-21.52
4	0.20078	10.00	32.93	20.39	42.93	30.39	63.58	53.58	-20.65	-23.19
5	0.26719	10.01	29.11	20.71	39.12	30.72	61.20	51.20	-22.08	-20.48
6	0.34922	10.02	27.79	21.55	37.81	31.57	58.98	48.98	-21.17	-17.41

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
		Client device	250mW (24 dBm)
U-NII-2A		√	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C		√	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3		√	1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

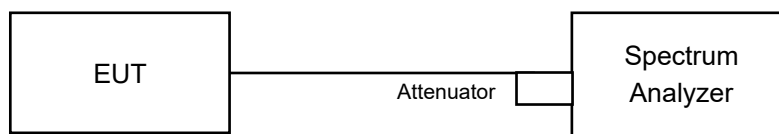
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

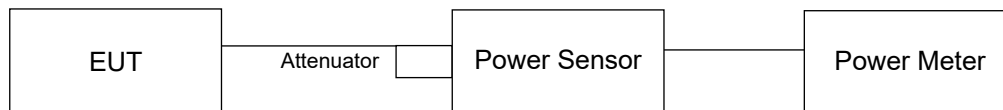
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

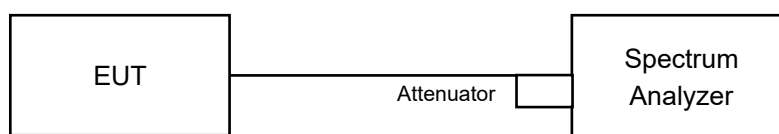
For channel straddling 5725MHz:



For other channels:



FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:

Follow FCC KDB 789033 UNII test procedure:

Method SA-2

1. Set span to encompass the emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Detector = RMS.
7. Trace average at least 100 traces in power averaging mode
8. Compute power by integrating the spectrum across the 26 dB EBW of the signal.
9. Duty factor need added to measured value (duty cycle < 98 percent).

For other channels:

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 26dB OCCUPIED BANDWIDTH

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Results

For Radio 2 (U-NII-2A Band)

CDD Mode

POWER OUTPUT

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	18.98	18.58	151.179	21.79	23.91	Pass
60	5300	18.78	18.77	150.845	21.79	23.94	Pass
64	5320	18.82	18.73	150.853	21.79	23.95	Pass

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	19.56	23.91 < 24
60	5300	19.68	23.94 < 24
64	5320	19.74	23.95 < 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	18.97	18.79	154.569	21.89	24.00	Pass
60	5300	18.91	18.68	151.594	21.81	24.00	Pass
64	5320	18.72	18.73	149.118	21.74	24.00	Pass

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.49	24.32 > 24
60	5300	21.5	24.32 > 24
64	5320	21.8	24.38 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	20.63	20.46	226.784	23.56	24.00	Pass
62	5310	18.96	18.98	157.772	21.98	24.00	Pass

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	42.69	27.3 > 24
62	5310	42.68	27.3 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	18.94	18.83	154.727	21.90	24.00	Pass

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	83.09	30.19 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.24	18.98	163.014	22.12	24.00	Pass
60	5300	18.98	18.96	157.772	21.98	24.00	Pass
64	5320	19.04	18.95	158.691	22.01	24.00	Pass

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.49	24.32 > 24
60	5300	21.5	24.32 > 24
64	5320	21.8	24.38 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	20.88	20.67	239.143	23.79	24.00	Pass
62	5310	19.22	19.23	167.313	22.24	24.00	Pass

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	42.69	27.3 > 24
62	5310	42.68	27.3 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	19.14	19.06	162.573	22.11	24.00	Pass

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	83.09	30.19 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	18.63	18.56	144.725	21.61	21.94	Pass
60	5300	18.58	18.66	145.562	21.63	21.94	Pass
64	5320	18.67	18.61	146.231	21.65	21.94	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.06 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.06-6)".

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.49	24.32 > 24
60	5300	21.5	24.32 > 24
64	5320	21.8	24.38 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	18.63	18.55	144.56	21.60	21.94	Pass
62	5310	18.76	18.53	146.448	21.66	21.94	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.06 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.06-6)".

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	42.69	27.3 > 24
62	5310	42.68	27.3 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	18.72	18.64	147.587	21.69	21.94	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.06 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.06-6)".

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	83.09	30.19 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	18.88	18.84	153.828	21.87	21.94	Pass
60	5300	18.86	18.91	154.717	21.90	21.94	Pass
64	5320	18.87	18.85	153.826	21.87	21.94	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.06 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.06-6)".

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	21.49	24.32 > 24
60	5300	21.5	24.32 > 24
64	5320	21.8	24.38 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	18.91	18.85	154.54	21.89	21.94	Pass
62	5310	18.97	18.81	154.919	21.90	21.94	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.06 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.06-6)".

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	42.69	27.3 > 24
62	5310	42.68	27.3 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	18.94	18.79	154.026	21.88	21.94	Pass

Note: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.06 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.06-6)".

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	83.09	30.19 > 24

Note: For Output power limitation is determined based on 26dBc bandwidth.

26dB OCCUPIED BANDWIDTH

CDD Mode

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	19.78	19.56
60	5300	19.68	19.74
64	5320	19.86	19.74

802.11ax (HE20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	21.58	21.49
60	5300	21.81	21.5
64	5320	21.91	21.8

802.11ax (HE40)

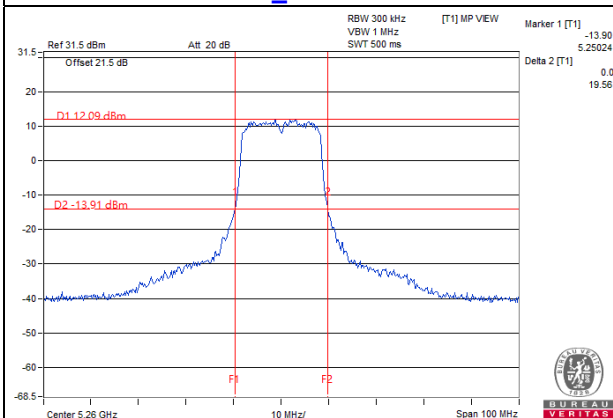
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	42.69	42.73
62	5310	42.68	43.07

802.11ax (HE80)

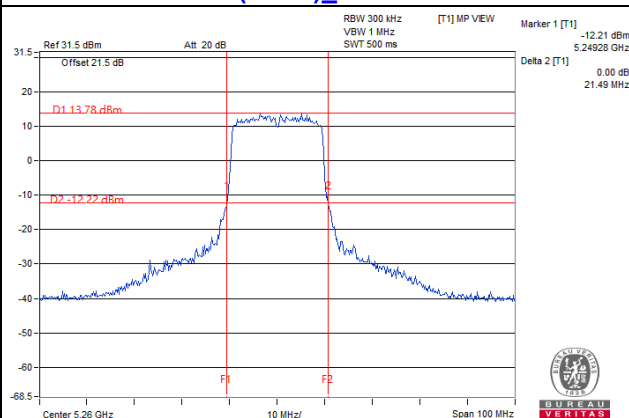
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.39	83.09

Spectrum Plot of Worst Value

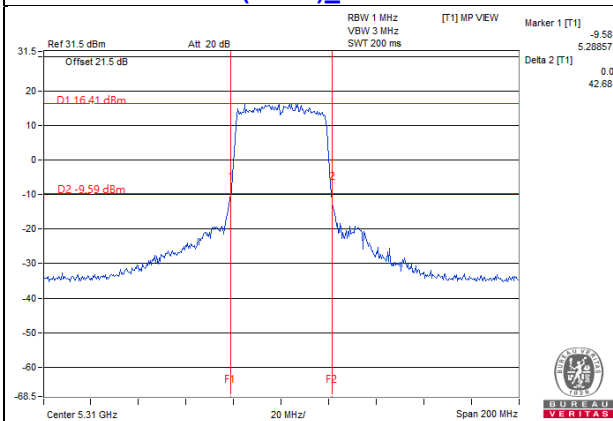
802.11a_Chain 1 / CH52



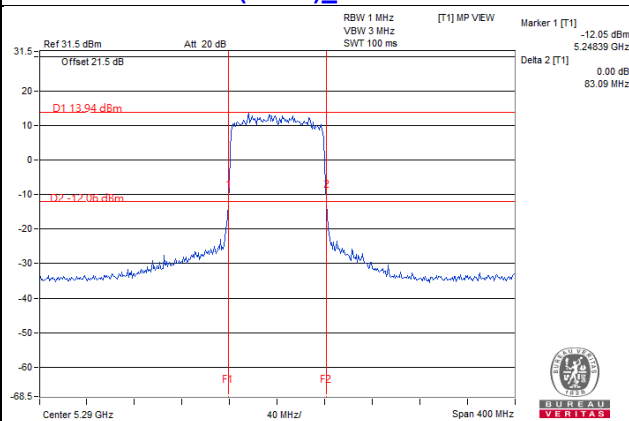
802.11ax (HE20)_Chain 1 / CH52



802.11ax (HE40)_Chain 0 / CH62



802.11ax (HE80)_Chain 1 / CH58



For Radio 3 (U-NII-2C, U-NII-3 Band)

CDD Mode

POWER OUTPUT

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	14.43	14.71	14.45	14.21	111.538	20.47	23.90	Pass
116	5580	14.49	14.52	14.60	13.99	110.334	20.43	23.94	Pass
140	5700	14.57	14.47	14.28	13.95	108.255	20.34	23.95	Pass
*144 (U-NII-2C Band)	5720	11.35	11.21	10.50	10.20	52.043	17.16	22.72	Pass
*144 (U-NII-3 Band)	5720	4.47	5.44	5.22	3.15	12.531	10.98	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	64.574	18.10	14.57	14.60	14.51	13.90	110.278	20.42

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
100	5500	19.53	23.9 < 24
116	5580	19.68	23.94 < 24
140	5700	19.73	23.95 < 24
144 (U-NII-2C Band)	5720	14.89	22.72 < 24

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	14.56	14.54	14.48	14.17	111.196	20.46	24.00	Pass
116	5580	14.65	14.60	14.68	14.06	112.859	20.53	24.00	Pass
140	5700	14.50	14.48	14.39	13.87	108.095	20.34	24.00	Pass
*144 (U-NII-2C Band)	5720	11.26	10.38	9.88	8.85	43.994	16.43	22.96	Pass
*144 (U-NII-3 Band)	5720	6.25	4.35	5.81	6.37	15.922	12.02	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	59.916	17.78	14.23	14.60	14.45	14.03	108.48	20.35

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
100	5500	21.19	24.26 > 24
116	5580	21.35	24.29 > 24
140	5700	21.44	24.31 > 24
144 (U-NII-2C Band)	5720	15.71	22.96 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
102	5510	17.40	17.30	17.33	16.79	210.486	23.23	24.00	Pass
110	5550	17.14	17.32	17.58	16.76	210.416	23.23	24.00	Pass
134	5670	17.31	17.51	17.50	17.18	218.664	23.40	24.00	Pass
*142 (U-NII-2C Band)	5710	15.00	12.82	14.26	14.32	109.566	20.40	24.00	Pass
*142 (U-NII-3 Band)	5710	4.21	5.02	5.83	2.61	12.024	10.80	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
142	5710	121.59	20.85	17.37	17.60	17.65	17.03	220.796	23.44

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
102	5510	42.21	27.25 > 24
110	5550	42.39	27.27 > 24
134	5670	42.28	27.26 > 24
142 (U-NII-2C Band)	5710	36.05	26.56 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
106	5530	17.02	17.23	17.41	16.91	207.366	23.17	24.00	Pass
122	5610	17.58	17.71	17.66	17.20	227.125	23.56	24.00	Pass
*138 (U-NII-2C Band)	5690	14.85	14.15	14.03	15.37	121.771	20.86	24.00	Pass
*138 (U-NII-3 Band)	5690	0.44	-0.18	-0.41	0.43	4.2727	6.31	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
138	5690	126.0437	21.01	17.63	17.61	17.73	17.14	226.673	23.55

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
106	5530	82.89	30.18 > 24
122	5610	82.86	30.18 > 24
138 (U-NII-2C Band)	5690	76.65	29.84 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	14.82	14.80	14.75	14.43	118.125	20.72	24.00	Pass
116	5580	14.89	14.85	14.95	14.34	119.806	20.78	24.00	Pass
140	5700	14.76	14.71	14.74	14.25	115.895	20.64	24.00	Pass
*144 (U-NII-2C Band)	5720	11.44	11.66	10.19	9.11	49.799	16.97	22.96	Pass
*144 (U-NII-3 Band)	5720	6.39	4.69	6.27	7.01	17.478	12.42	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	67.277	18.28	14.86	14.95	14.93	14.40	120.54	20.81

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
100	5500	21.19	24.26 > 24
116	5580	21.35	24.29 > 24
140	5700	21.44	24.31 > 24
144 (U-NII-2C Band)	5720	15.71	22.96 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
102	5510	17.63	17.55	17.58	17.05	222.807	23.48	24.00	Pass
110	5550	17.42	17.60	17.82	17.03	223.752	23.50	24.00	Pass
134	5670	17.52	17.75	17.72	17.42	230.424	23.63	24.00	Pass
*142 (U-NII-2C Band)	5710	15.54	13.23	14.37	14.50	117.862	20.71	24.00	Pass
*142 (U-NII-3 Band)	5710	4.44	5.41	6.06	3.07	12.92	11.11	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
142	5710	130.782	21.17	17.65	17.88	17.92	17.31	235.358	23.72

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
102	5510	42.21	27.25 > 24
110	5550	42.39	27.27 > 24
134	5670	42.28	27.26 > 24
142 (U-NII-2C Band)	5710	36.05	26.56 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
106	5530	17.31	17.51	17.62	17.13	219.642	23.42	24.00	Pass
122	5610	17.82	17.98	17.93	17.46	241.145	23.82	24.00	Pass
*138 (U-NII-2C Band)	5690	15.48	14.47	14.42	15.47	132.176	21.21	24.00	Pass
*138 (U-NII-3 Band)	5690	0.83	0.01	-0.01	0.64	4.5758	6.60	30.00	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
138	5690	136.7518	21.36	17.89	17.84	17.96	17.36	239.299	23.79

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
106	5530	82.89	30.18 > 24
122	5610	82.86	30.18 > 24
138 (U-NII-2C Band)	5690	76.65	29.84 > 24

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	13.94	14.04	14.13	13.71	99.504	19.98	20.54	Pass
116	5580	14.04	13.95	14.12	13.86	100.327	20.01	20.54	Pass
140	5700	13.90	14.04	13.92	13.47	96.792	19.86	20.54	Pass
*144 (U-NII-2C Band)	5720	11.12	9.87	9.64	8.21	40.608	16.09	19.50	Pass
*144 (U-NII-3 Band)	5720	6.01	4.04	5.57	5.73	14.642	11.66	26.30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

1. For U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.46 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(9.46-6)".

2. For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm}$.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	55.25	17.42	14.15	14.30	14.39	13.94	105.17	20.22

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
100	5500	21.19	24.26 > 24
116	5580	21.35	24.29 > 24
140	5700	21.44	24.31 > 24
144 (U-NII-2C Band)	5720	15.71	22.96 < 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
102	5510	14.15	14.26	14.42	13.58	103.143	20.13	20.54	Pass
110	5550	14.18	14.15	14.38	13.95	104.43	20.19	20.54	Pass
134	5670	14.08	14.21	14.22	13.92	103.034	20.13	20.54	Pass
*142 (U-NII-2C Band)	5710	11.75	12.28	10.42	11.24	58.925	17.70	20.54	Pass
*142 (U-NII-3 Band)	5710	0.99	4.48	1.01	-1.42	6.339	8.02	26.30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

1. For U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.46 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(9.46-6)".

2. For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm}$.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
142	5710	65.264	18.15	14.02	14.27	14.26	13.90	103.181	20.14

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
102	5510	42.21	27.25 > 24
110	5550	42.39	27.27 > 24
134	5670	42.28	27.26 > 24
142 (U-NII-2C Band)	5710	36.05	26.56 > 24

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
106	5530	14.26	14.36	14.41	13.95	106.395	20.27	20.54	Pass
122	5610	14.04	14.15	14.21	13.58	100.52	20.02	20.54	Pass
*138 (U-NII-2C Band)	5690	11.80	13.99	10.22	11.46	67.769	18.31	20.54	Pass
*138 (U-NII-3 Band)	5690	-3.16	-0.59	-4.79	-3.15	2.2747	3.57	26.30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

1. For U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.46 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(9.46-6)".

2. For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm}$.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
138	5690	70.0437	18.45	13.97	14.05	14.06	13.84	100.034	20.00

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
106	5530	82.89	30.18 > 24
122	5610	82.86	30.18 > 24
138 (U-NII-2C Band)	5690	76.65	29.84 > 24

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	14.22	14.26	14.36	13.97	105.328	20.23	20.54	Pass
116	5580	14.29	14.24	14.36	14.16	106.751	20.28	20.54	Pass
140	5700	14.14	14.25	14.18	13.76	102.499	20.11	20.54	Pass
*144 (U-NII-2C Band)	5720	11.36	11.52	9.99	8.81	47.97	16.81	19.50	Pass
*144 (U-NII-3 Band)	5720	6.10	4.12	6.08	6.47	15.988	12.04	26.30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

1. For U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.46 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(9.46-6)".

2. For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm}$.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
144	5720	63.958	18.06	14.42	14.56	14.61	14.16	111.214	20.46

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
100	5500	21.19	24.26 > 24
116	5580	21.35	24.29 > 24
140	5700	21.44	24.31 > 24
144 (U-NII-2C Band)	5720	15.71	22.96 < 24

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
102	5510	14.43	14.52	14.67	13.85	109.622	20.40	20.54	Pass
110	5550	14.45	14.41	14.65	14.16	110.703	20.44	20.54	Pass
134	5670	14.35	14.49	14.44	14.16	109.205	20.38	20.54	Pass
*142 (U-NII-2C Band)	5710	11.85	9.90	10.42	10.73	50.265	17.01	20.54	Pass
*142 (U-NII-3 Band)	5710	0.18	1.69	1.95	0.03	5.34	7.28	26.30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

1. For U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.46 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(9.46-6)".

2. For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm}$.

The Total Power for the straddle channel and power meter value for reference only:

Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
142	5710	55.605	17.45	14.29	14.53	14.47	14.15	109.224	20.38

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
102	5510	42.21	27.25 > 24
110	5550	42.39	27.27 > 24
134	5670	42.28	27.26 > 24
142 (U-NII-2C Band)	5710	36.05	26.56 > 24

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
106	5530	14.52	14.57	14.62	14.24	112.475	20.51	20.54	Pass
122	5610	14.27	14.37	14.43	13.87	106.194	20.26	20.54	Pass
*138 (U-NII-2C Band)	5690	12.17	11.52	11.57	12.04	63.905	18.06	20.54	Pass
*138 (U-NII-3 Band)	5690	-3.04	-3.14	-3.23	-2.64	2.0963	3.21	26.30	Pass

Note: * Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

1. For U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.46 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(9.46-6)".

2. For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm}$.

The Total Power for the straddle channel and power meter value for reference only:

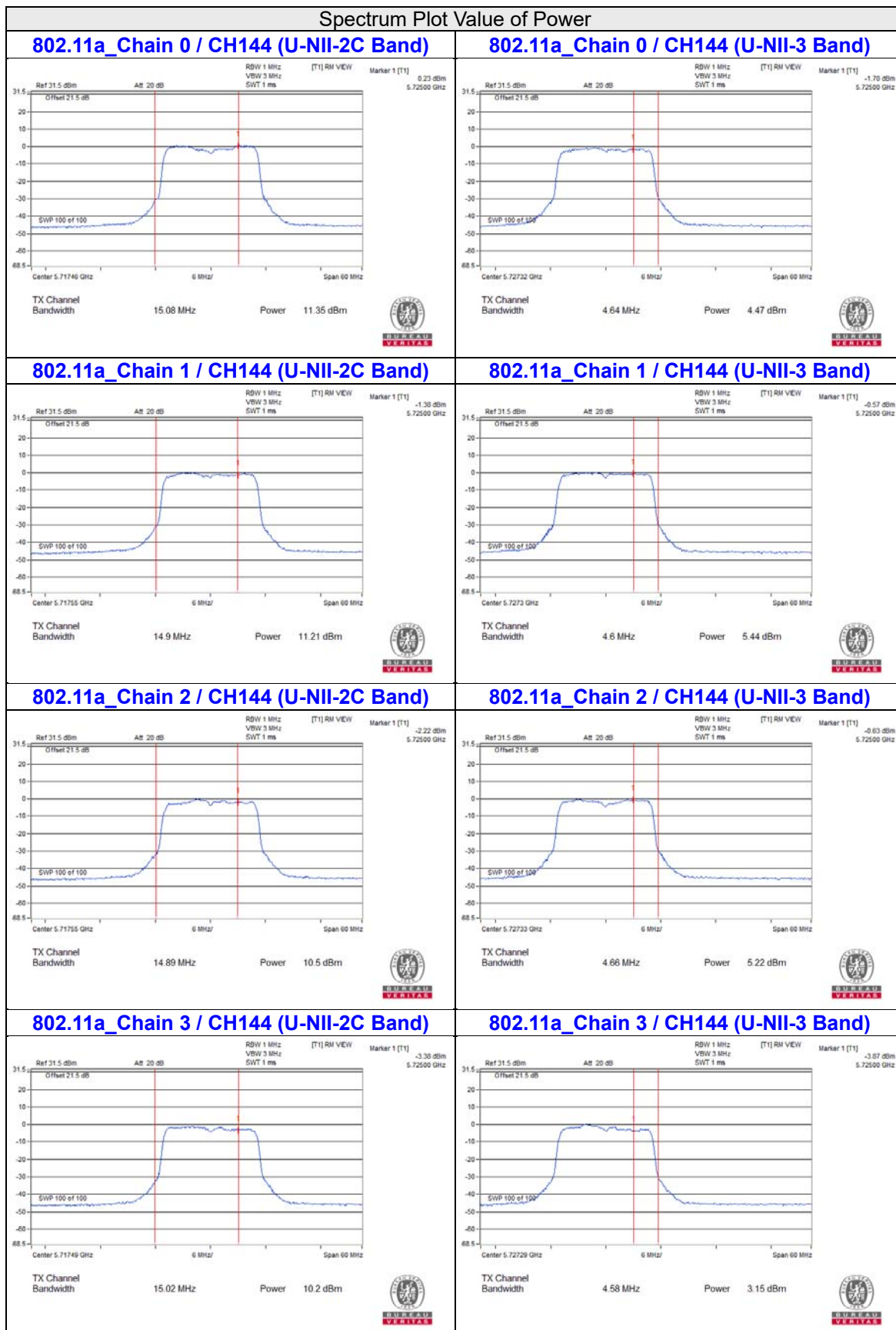
Chan.	Chan. Freq. (MHz)	Total Power (mW)	Total Power (dBm)	Average Power (dBm)				Total Average Power (mW)	Total Average Power (dBm)
				Chain 0	Chain 1	Chain 2	Chain 3		
138	5690	66.0013	18.20	14.26	14.33	14.34	14.07	106.462	20.27

Note: For Output power limitation is determined based on 26dBc bandwidth.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
106	5530	82.89	30.18 > 24
122	5610	82.86	30.18 > 24
138 (U-NII-2C Band)	5690	76.65	29.84 > 24

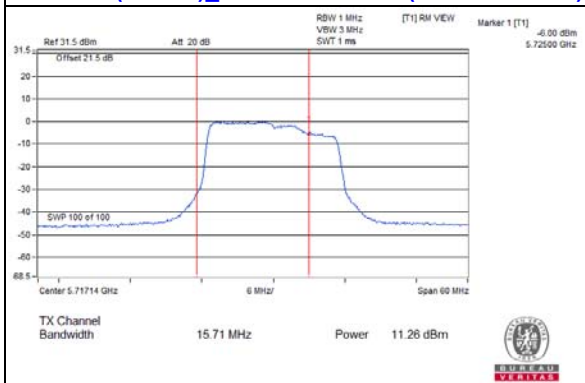
For channel straddling 5725MHz of Power

CDD Mode

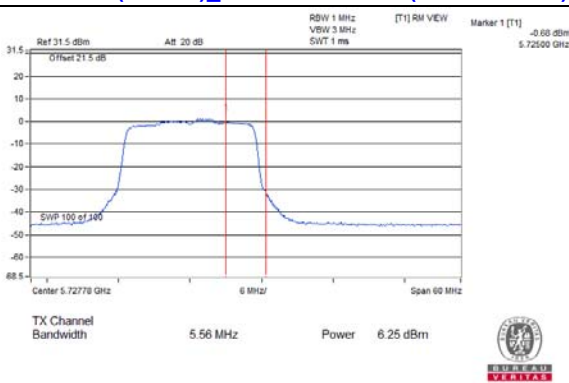


Spectrum Plot Value of Power

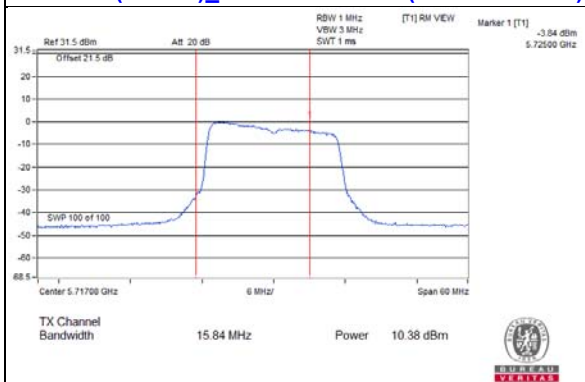
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-2C Band)



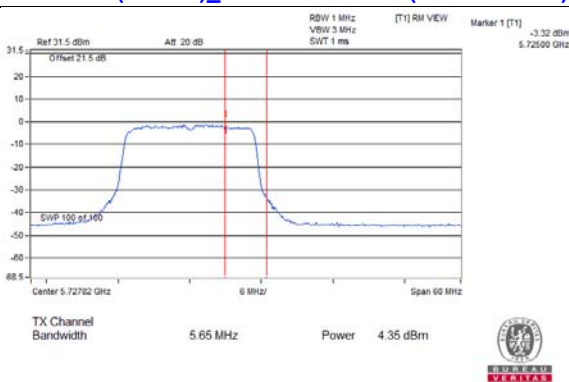
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



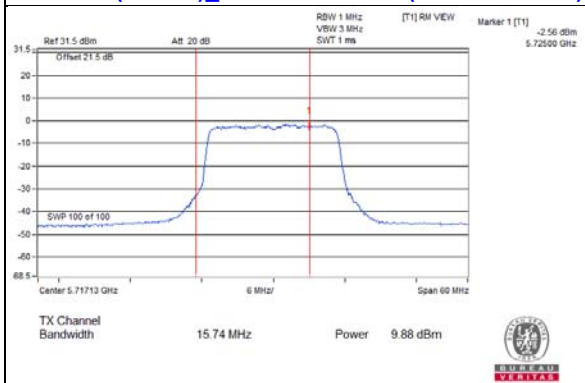
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)



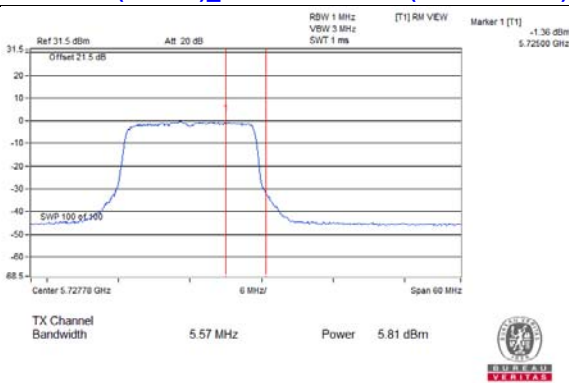
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-3 Band)



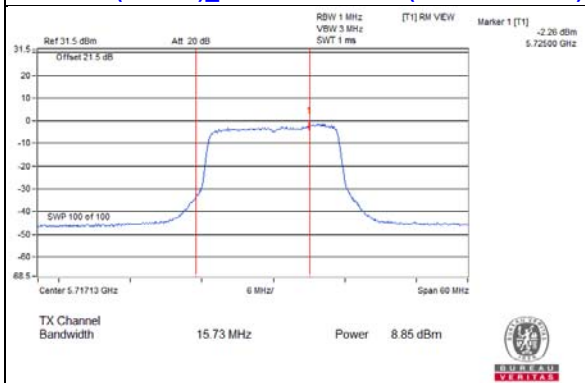
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-2C Band)



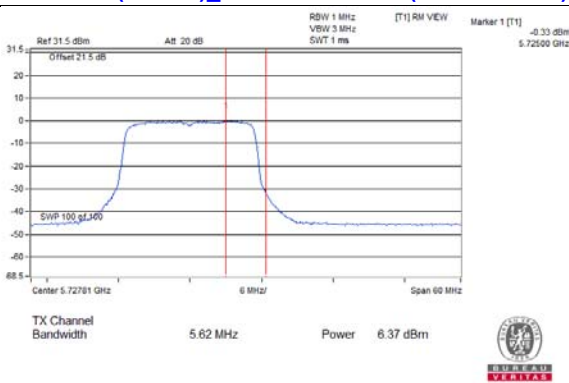
802.11ac (VHT20)_Chain 2 / CH144 (U-NII-3 Band)



802.11ac (VHT20)_Chain 3 / CH144 (U-NII-2C Band)

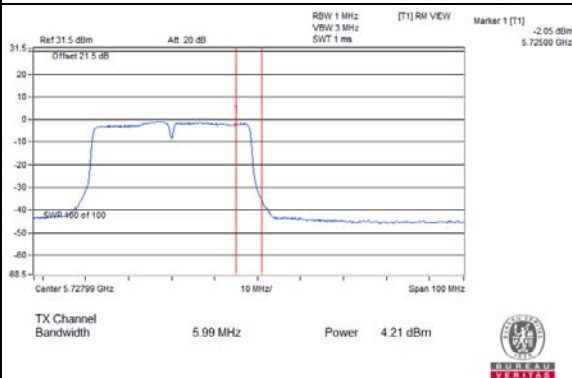
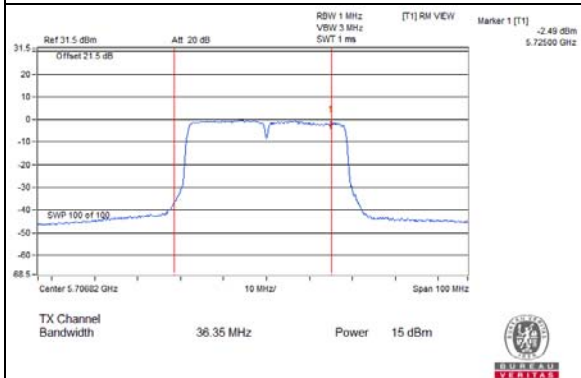


802.11ac (VHT20)_Chain 3 / CH144 (U-NII-3 Band)

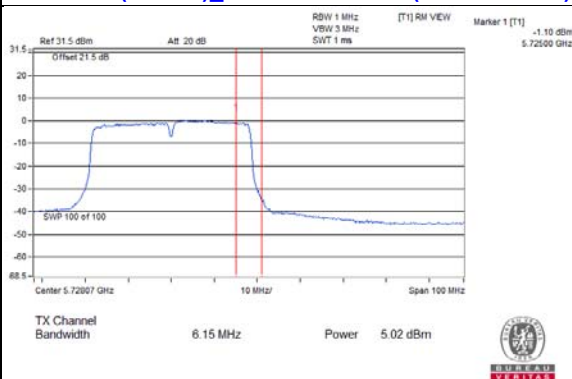
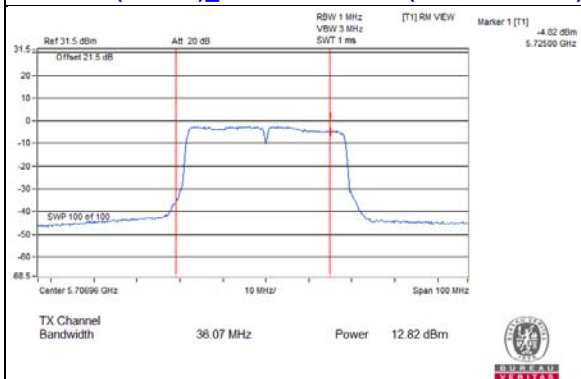


Spectrum Plot Value of Power

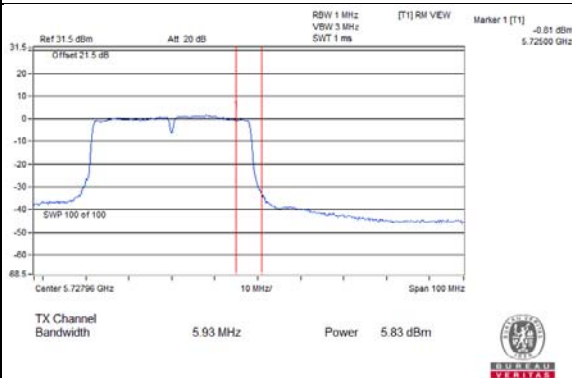
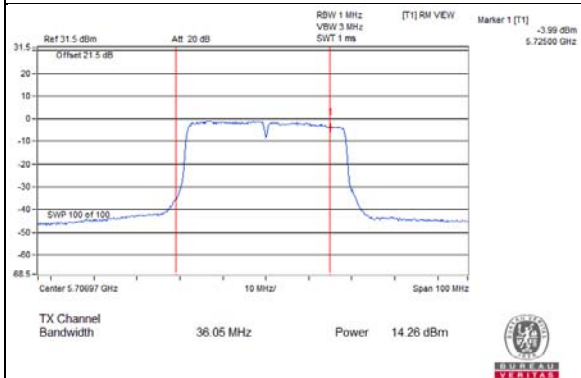
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



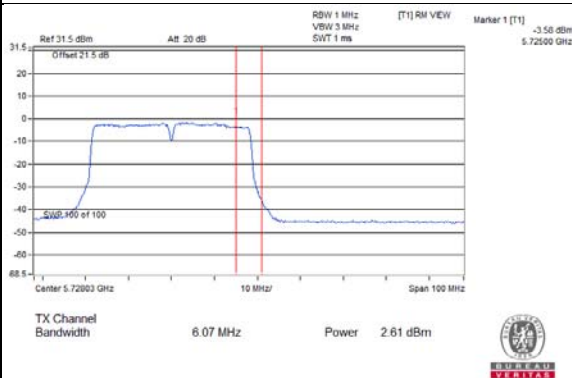
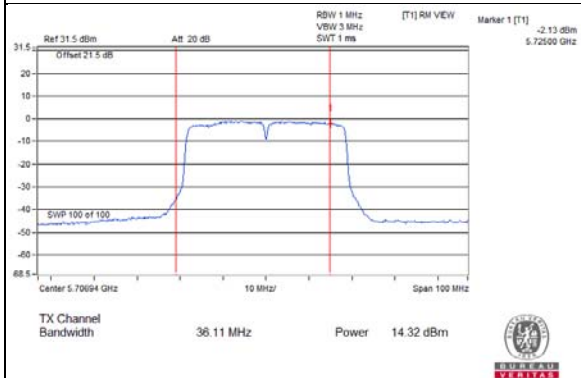
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)

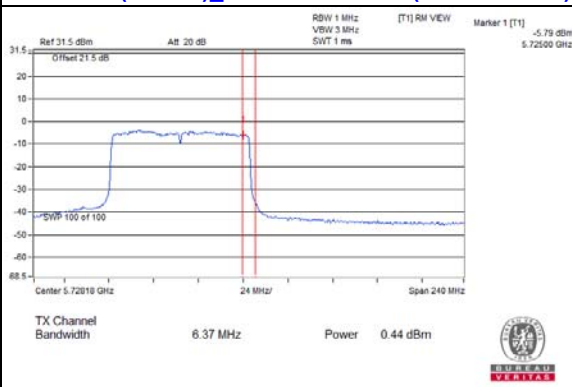
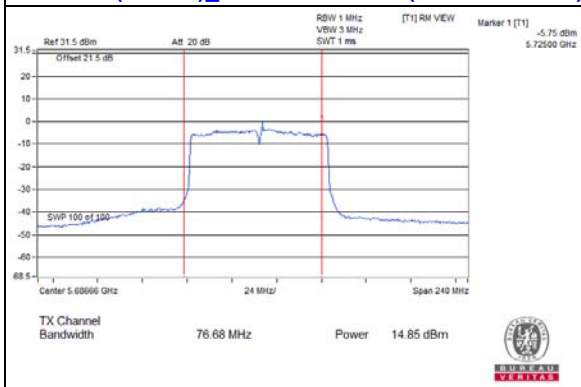


802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)

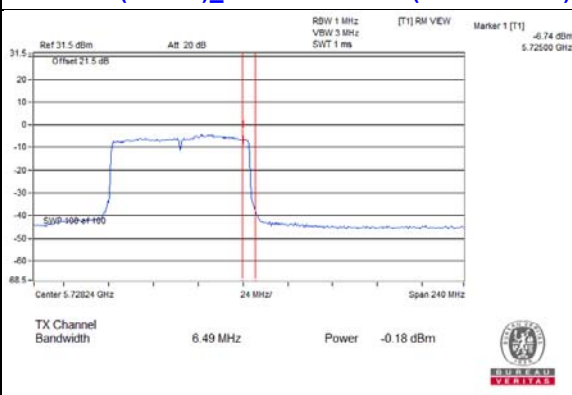
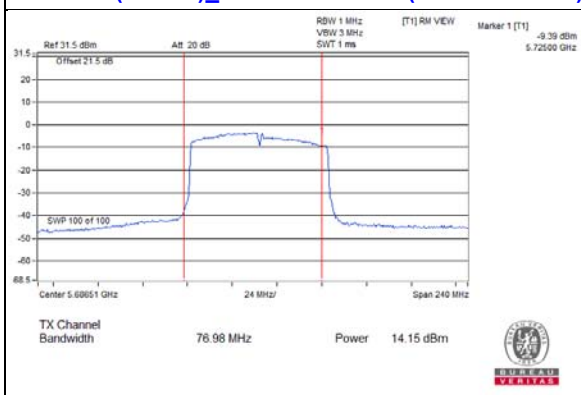


Spectrum Plot Value of Power

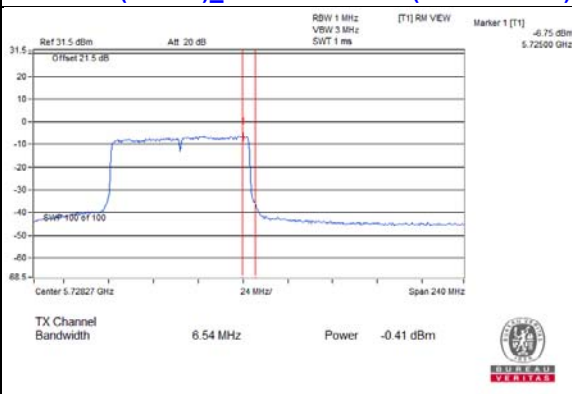
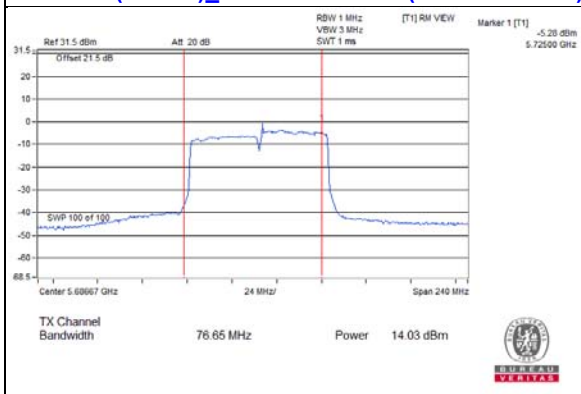
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



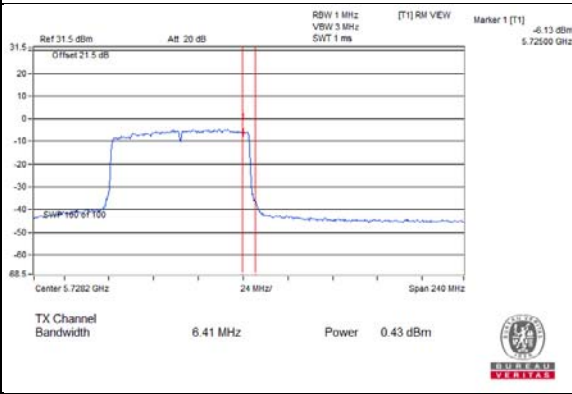
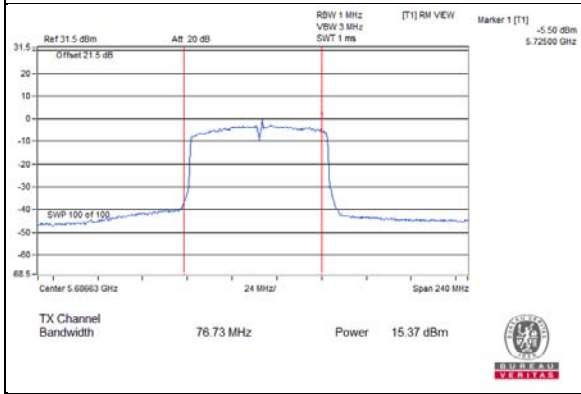
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



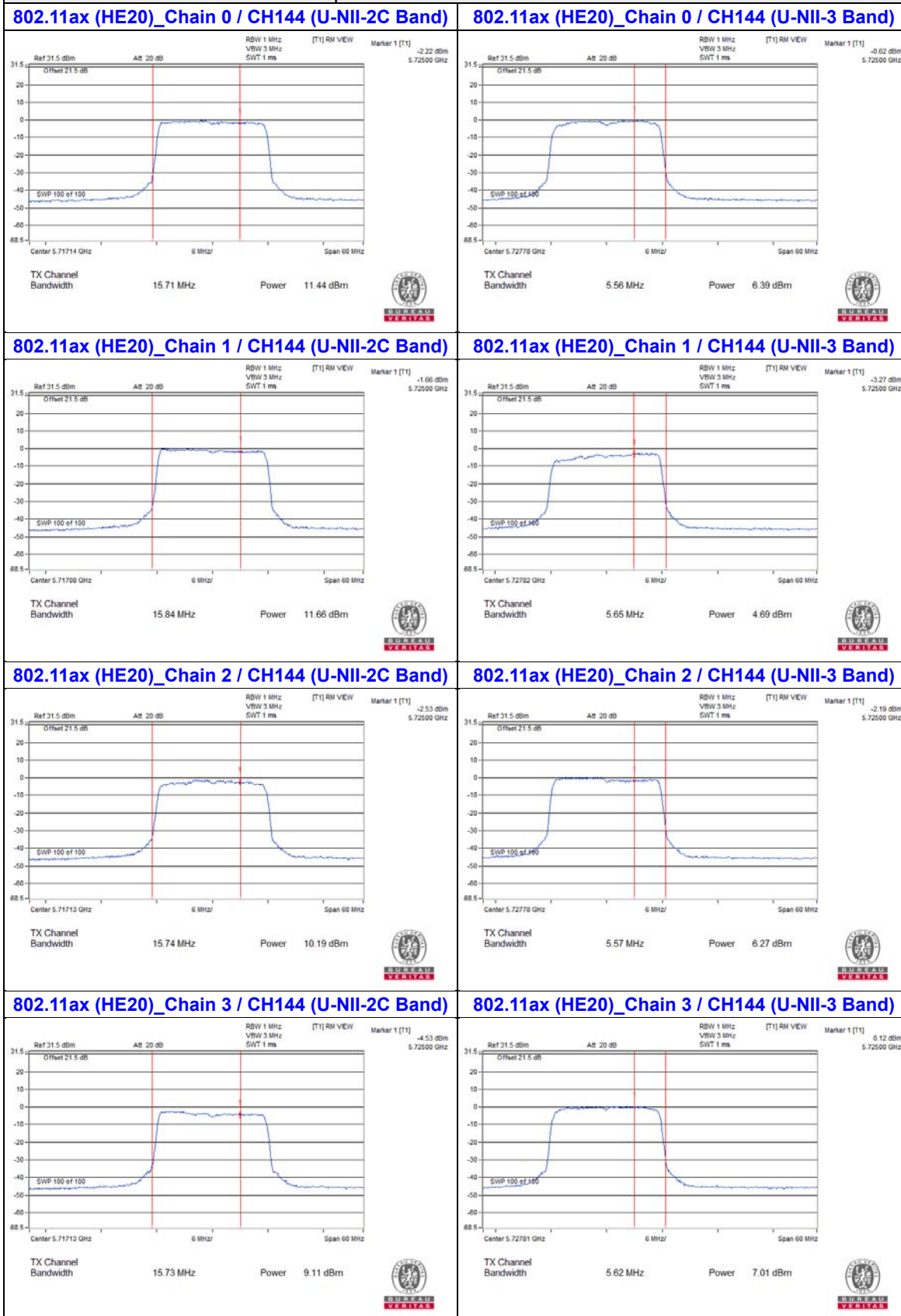
802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)



Spectrum Plot Value of Power



Spectrum Plot Value of Power



Spectrum Plot Value of Power

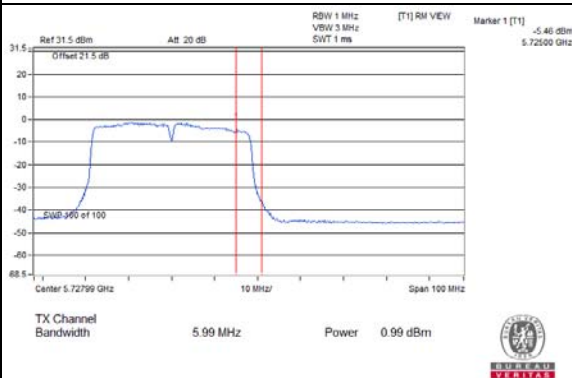
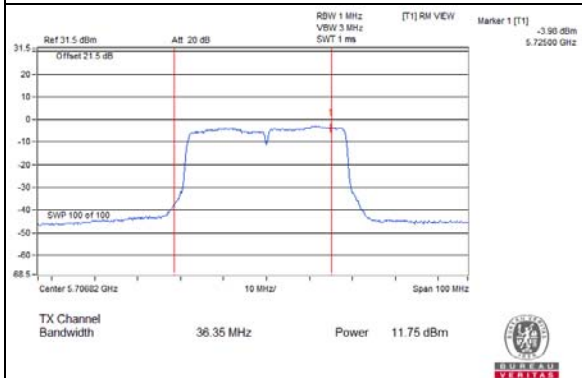


Beamforming Mode

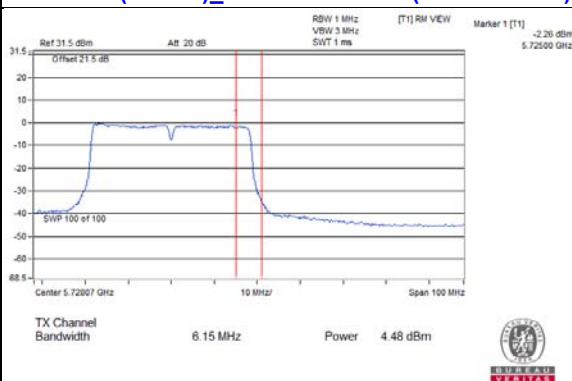
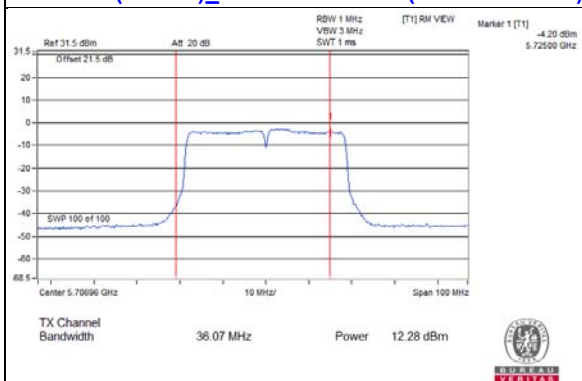


Spectrum Plot Value of Power

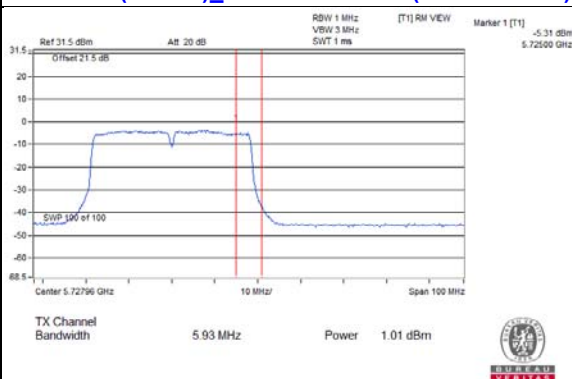
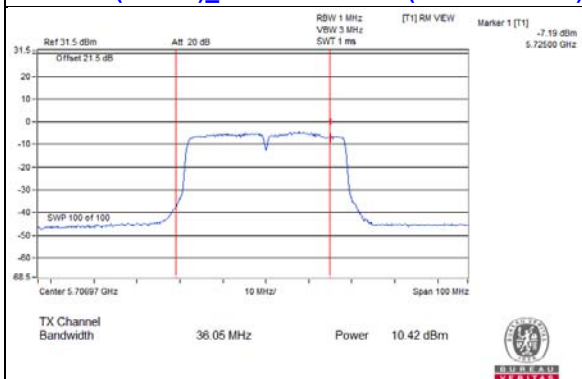
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



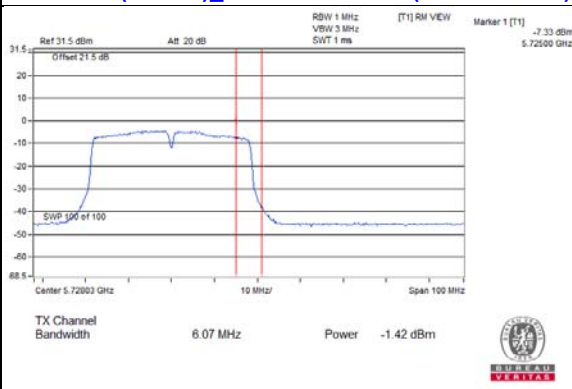
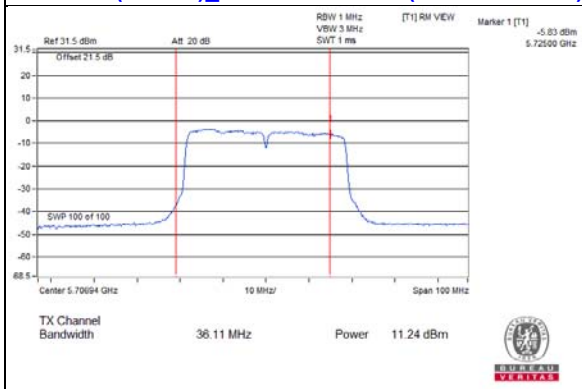
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



802.11ac (VHT40)_Chain 2 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 2 / CH142 (U-NII-3 Band)

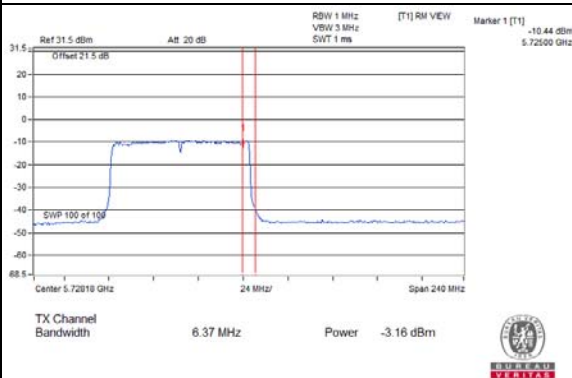
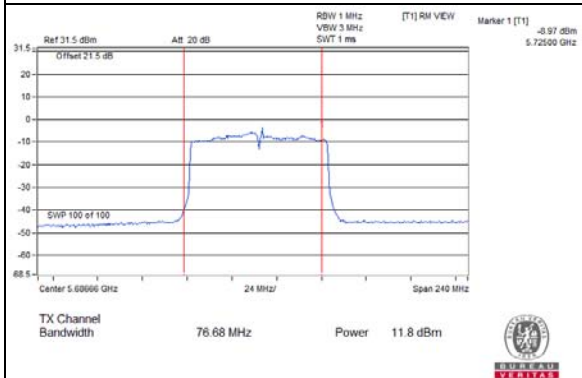


802.11ac (VHT40)_Chain 3 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 3 / CH142 (U-NII-3 Band)

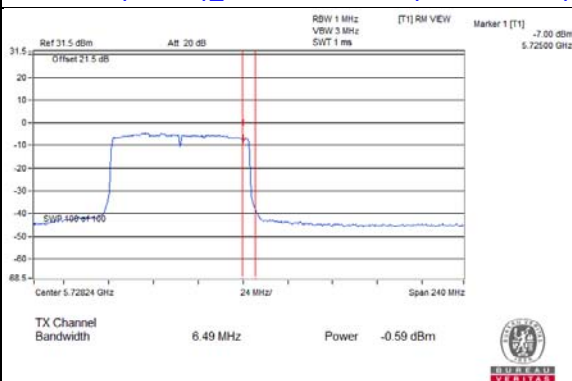
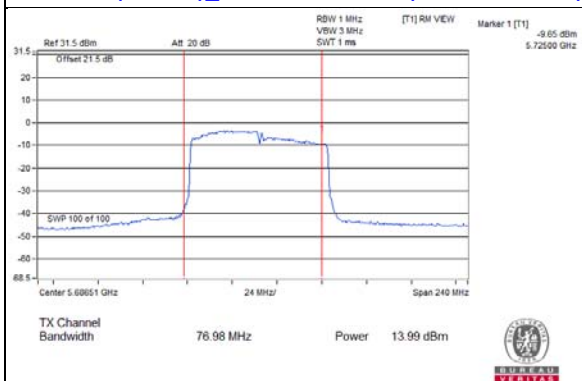


Spectrum Plot Value of Power

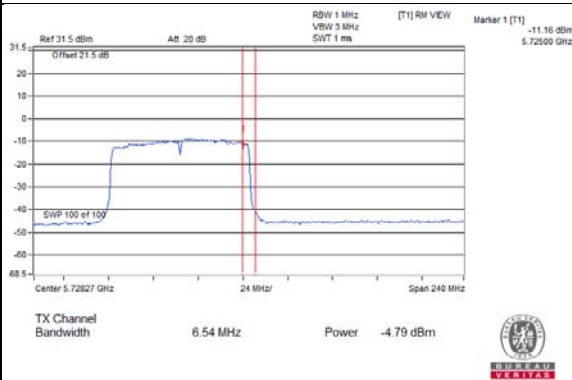
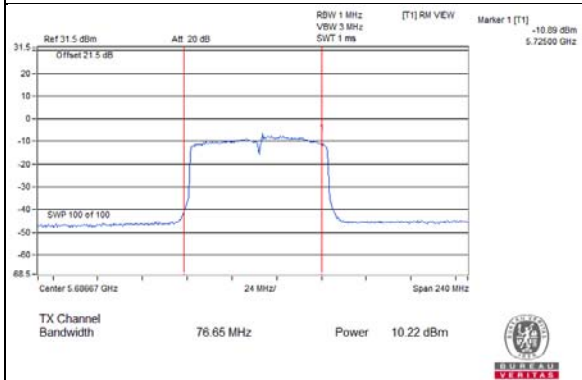
802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



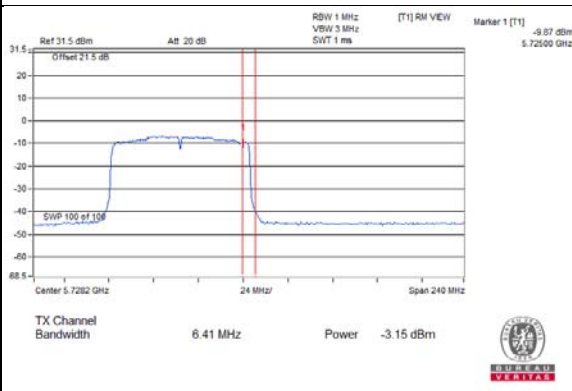
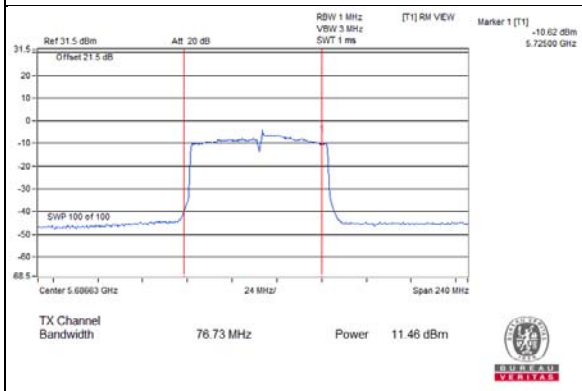
802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)

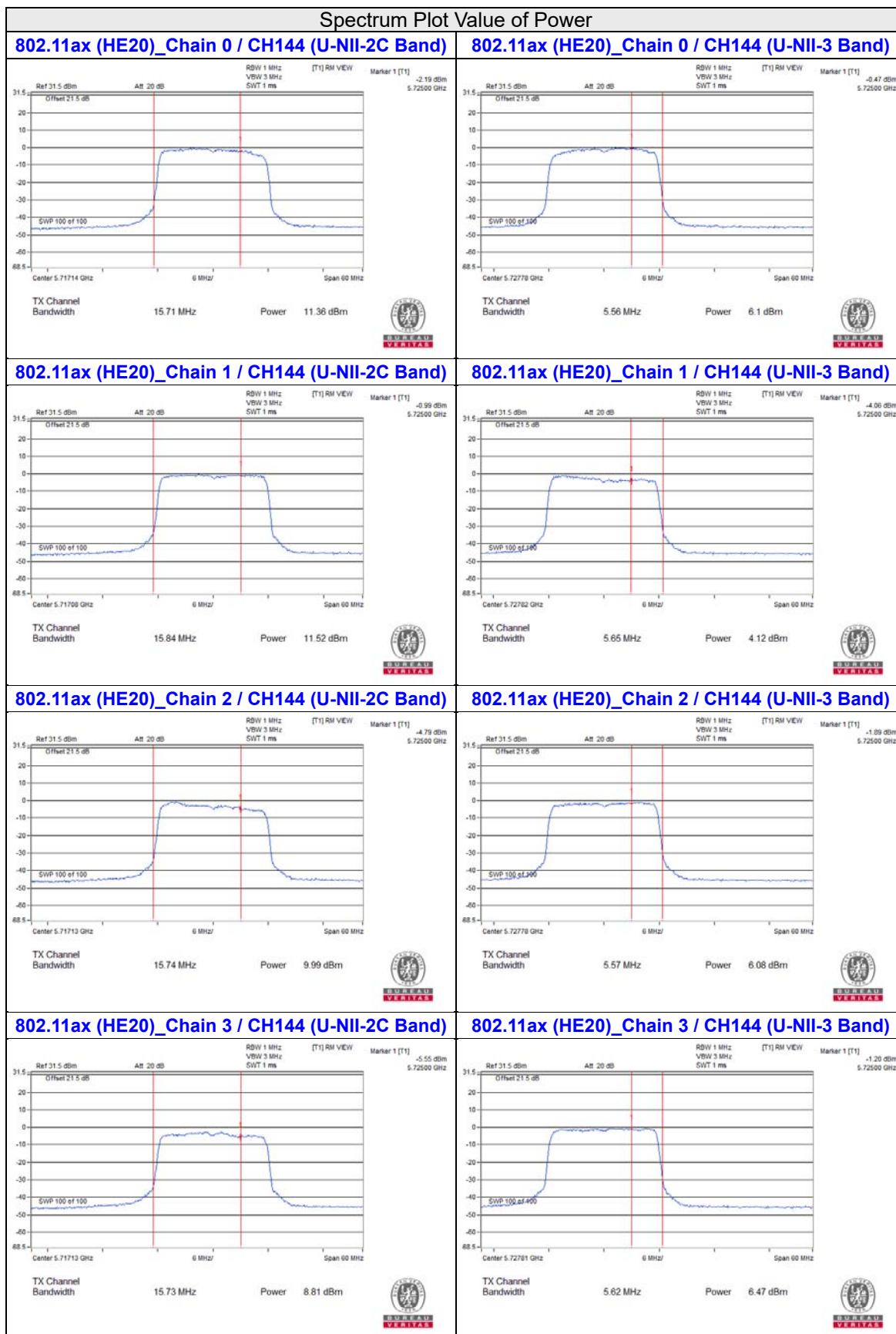


802.11ac (VHT80)_Chain 2 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 2 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 3 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 3 / CH138 (U-NII-3 Band)





Spectrum Plot Value of Power



Spectrum Plot Value of Power



26dB OCCUPIED BANDWIDTH

CDD Mode

802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
100	5500	19.53	19.64	19.58	19.63
116	5580	19.68	19.69	19.68	19.84
140	5700	19.73	20	19.83	19.77
144 (U-NII-2C Band)	5720	15.08	14.9	14.89	15.02

802.11ax (HE20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
100	5500	21.43	21.19	21.65	21.25
116	5580	21.62	21.35	21.48	21.49
140	5700	21.57	21.46	21.54	21.44
144 (U-NII-2C Band)	5720	15.71	15.84	15.74	15.73

802.11ax (HE40)

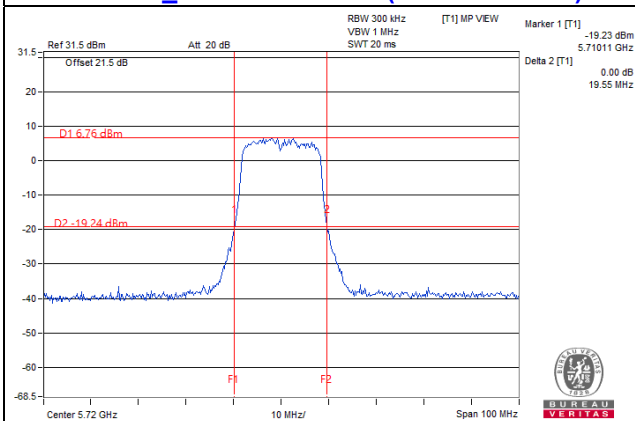
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
102	5510	42.24	42.34	42.21	42.26
110	5550	42.4	42.42	42.39	42.53
134	5670	42.63	42.45	42.32	42.28
142 (U-NII-2C Band)	5710	36.35	36.07	36.05	36.11

802.11ax (HE80)

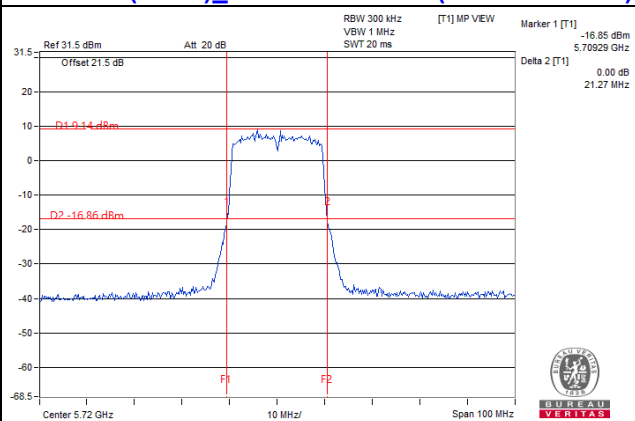
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
106	5530	82.89	82.94	83.22	83.24
122	5610	83.46	82.86	83.39	83.62
138 (U-NII-2C Band)	5690	76.68	76.98	76.65	76.73

Spectrum Plot of Worst Value

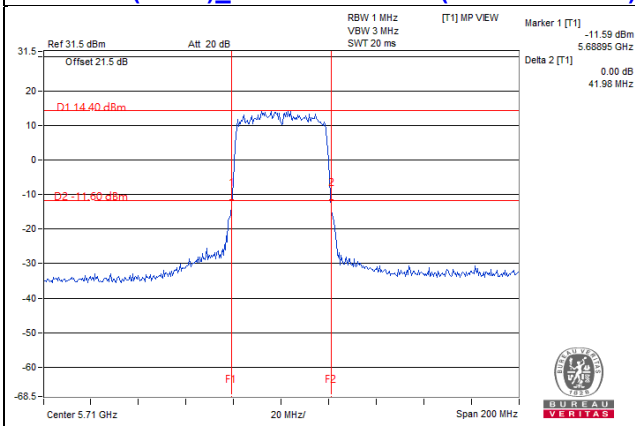
802.11a_Chain 2 / CH144 (U-NII-2C Band)



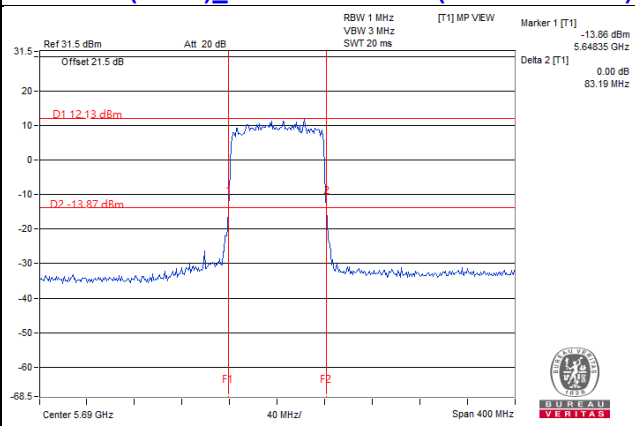
802.11ax (HE20)_Chain 0 / CH144 (U-NII-2C Band)



802.11ax (HE40)_Chain 2 / CH142 (U-NII-2C Band)



802.11ax (HE80)_Chain 2 / CH138 (U-NII-2C Band)

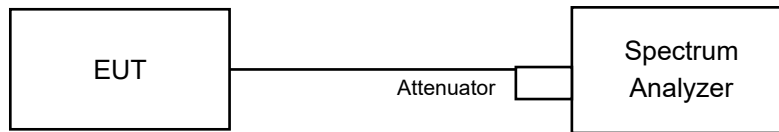


Note:

- For CH144 (U-NII-2C) = 5725MHz - Marker 1
- For CH142 (U-NII-2C) = 5725MHz - Marker 1
- For CH138 (U-NII-2C) = 5725MHz - Marker 1

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to SAMPLE. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

4.4.4 Test Results

For Radio 2 (U-NII-2A Band)

CDD Mode

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	16.44	16.44
60	5300	16.56	16.44
64	5320	16.44	16.44

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	19.08	18.96
60	5300	18.96	18.96
64	5320	18.96	18.96

802.11ax (HE40)

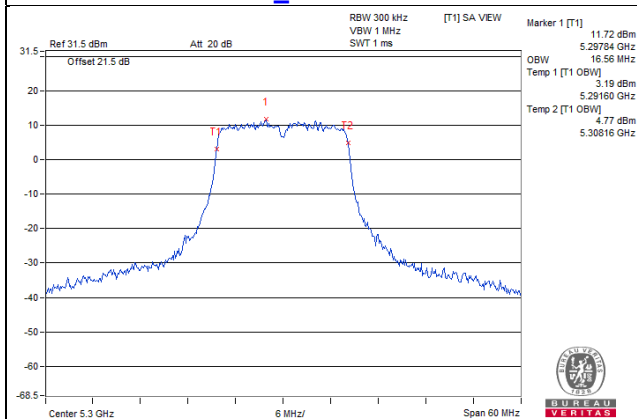
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	38.16	38.16
62	5310	38.16	38.16

802.11ax (HE80)

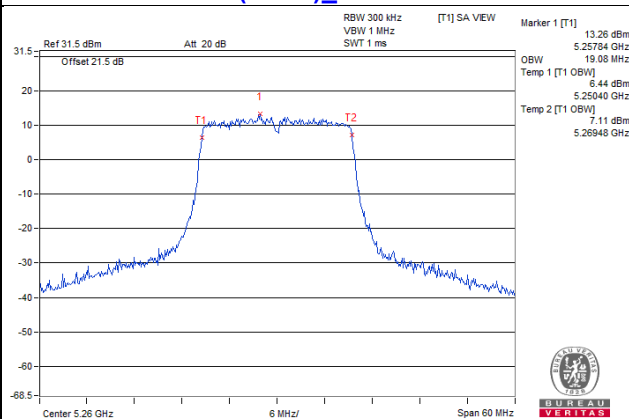
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	77.28	77.28

Spectrum Plot of Max. Value

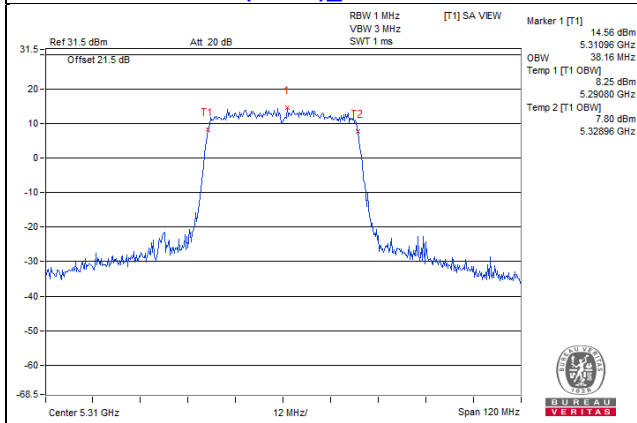
802.11a_Chain 0 / CH60



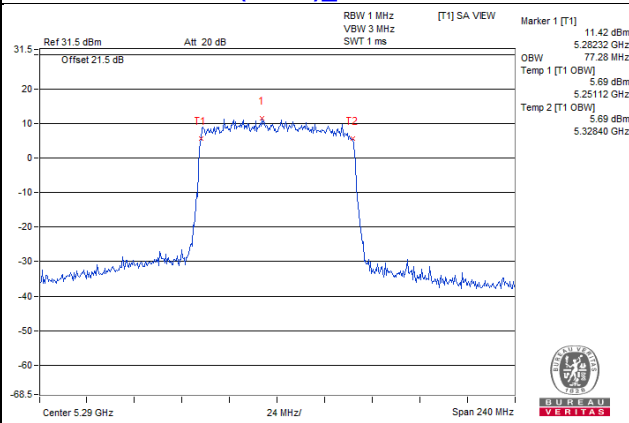
802.11ax (HE20)_Chain 0 / CH52



802.11ax (HE40)_Chain 1 / CH62



802.11ax (HE80)_Chain 0 / CH58



For Radio 3 (U-NII-2C, U-NII-3 Band)

CDD Mode

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
100	5500	16.44	16.44	16.44	16.44
116	5580	16.44	16.44	16.44	16.44
140	5700	16.44	16.44	16.44	16.44
144 (U-NII-2C Band)	5720	13.28	13.28	13.28	13.28
144 (U-NII-3 Band)	5720	3.16	3.16	3.16	3.16

802.11ax (HE20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
100	5500	18.96	18.96	18.84	18.84
116	5580	18.96	18.84	18.96	18.96
140	5700	19.08	18.84	18.84	19.08
144 (U-NII-2C Band)	5720	14.6	14.6	14.6	14.6
144 (U-NII-3 Band)	5720	4.36	4.36	4.36	4.36

802.11ax (HE40)

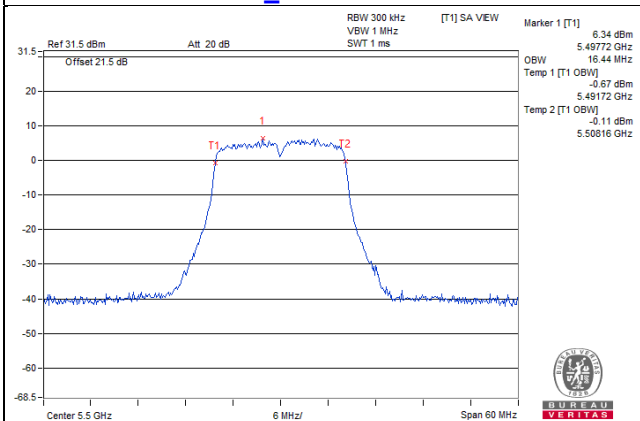
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
102	5510	37.92	37.92	37.92	37.92
110	5550	38.16	37.92	37.92	37.92
134	5670	37.92	38.16	38.16	37.92
142 (U-NII-2C Band)	5710	33.96	34.2	33.96	33.96
142 (U-NII-3 Band)	5710	3.96	3.96	3.96	3.96

802.11ax (HE80)

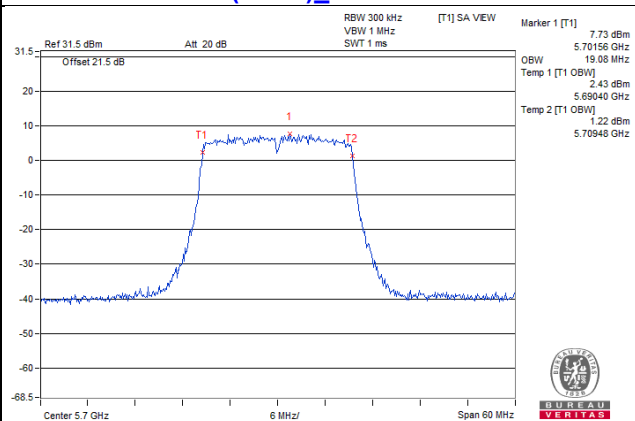
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
106	5530	77.28	77.28	77.28	77.28
122	5610	77.28	77.28	77.28	77.76
138 (U-NII-2C Band)	5690	73.88	73.88	73.4	73.88
138 (U-NII-3 Band)	5690	3.4	3.4	3.4	3.4

Spectrum Plot of Max. Value

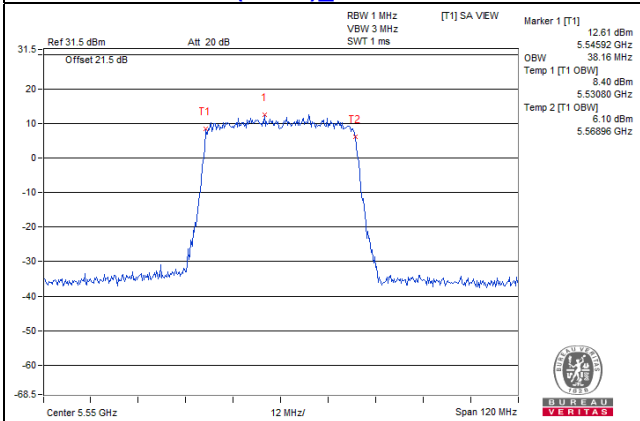
802.11a_Chain 0 / CH100



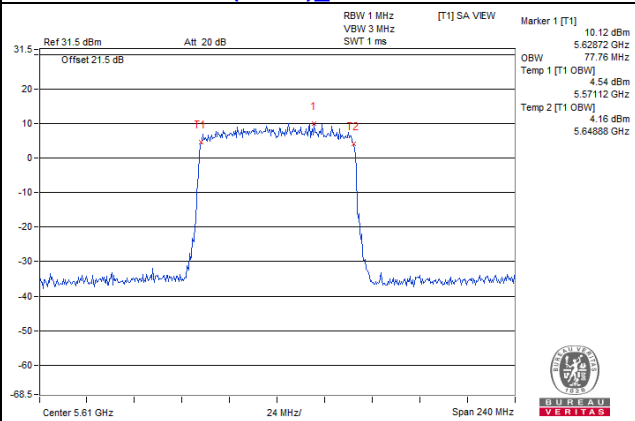
802.11ax (HE20)_Chain 0 / CH140



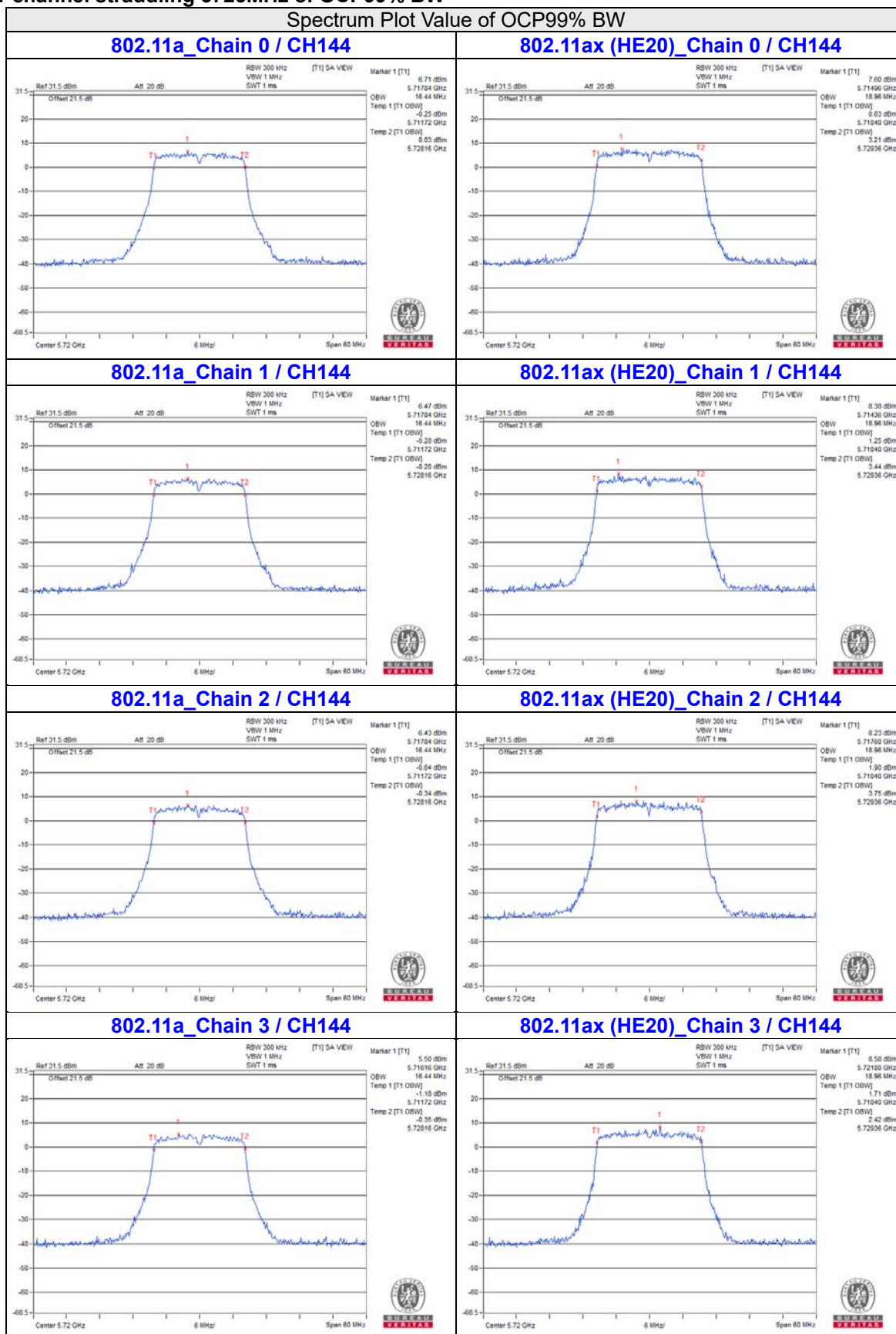
802.11ax (HE40)_Chain 0 / CH110



802.11ax (HE80)_Chain 3 / CH122



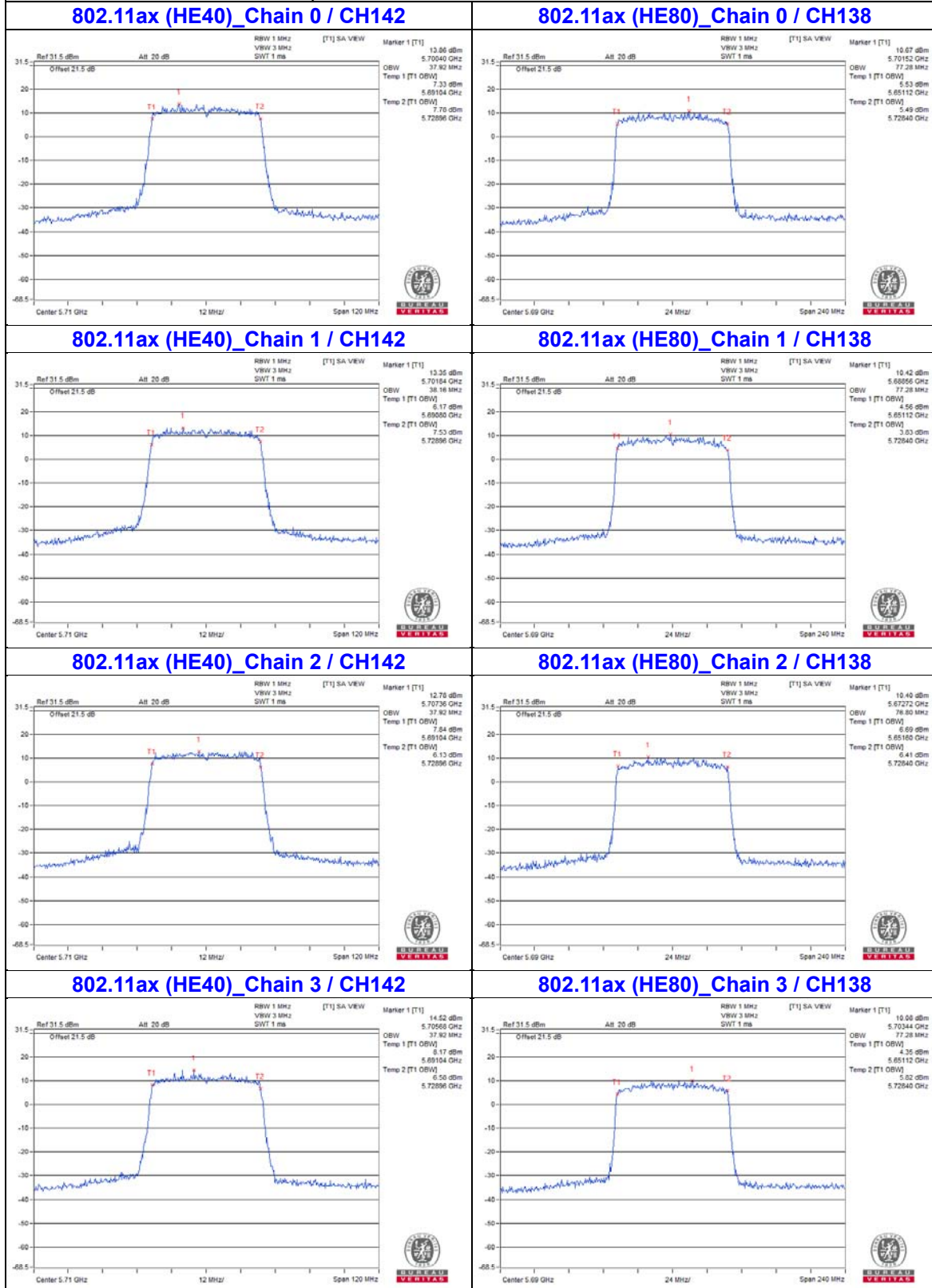
For channel straddling 5725MHz of OCP99% BW



Note:

For CH144 (U-NII-2C) = 5725MHz - Temp 1
 For CH144 (U-NII-3) = Temp 2 - 5725MHz

Spectrum Plot Value of OCP99% BW



Note:

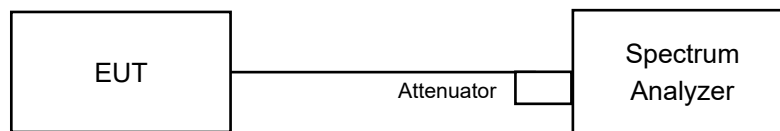
- For CH142 (U-NII-2C) = 5725MHz - Temp 1
- For CH138 (U-NII-2C) = 5725MHz - Temp 1
- For CH142 (U-NII-3) = Temp 2 - 5725MHz
- For CH138 (U-NII-3) = Temp 2 - 5725MHz

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
		Client device	11dBm/ MHz
U-NII-2A		√	11dBm/ MHz
U-NII-2C		√	11dBm/ MHz
U-NII-3		√	30dBm/ 500kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For U-NII-2A, U-NII-2C band:

Using method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW \geq 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to "free run".
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and add $10 \log (1/\text{duty cycle})$

For U-NII-3 band:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10 \log(500\text{kHz}/300\text{kHz})$
5. Sweep time = auto, trigger set to "free run".
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and add $10 \log (1/\text{duty cycle})$

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For Radio 2 (U-NII-2A Band)

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	5.43	4.69	0.29	8.38	8.94	Pass
60	5300	5.49	4.69	0.29	8.41	8.94	Pass
64	5320	4.02	6.23	0.29	8.56	8.94	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 8.06 dBi > 6 dBi, so the power density limit shall be reduced to $11-(8.06-6) = 8.94$ dBm/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	5.20	5.96	0.21	8.82	8.94	Pass
60	5300	4.60	5.50	0.21	8.29	8.94	Pass
64	5320	4.90	6.09	0.21	8.76	8.94	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 8.06 dBi > 6 dBi, so the power density limit shall be reduced to $11-(8.06-6) = 8.94$ dBm/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
54	5270	3.28	3.54	0.21	6.63	8.94	Pass
62	5310	2.89	0.85	0.21	5.21	8.94	Pass

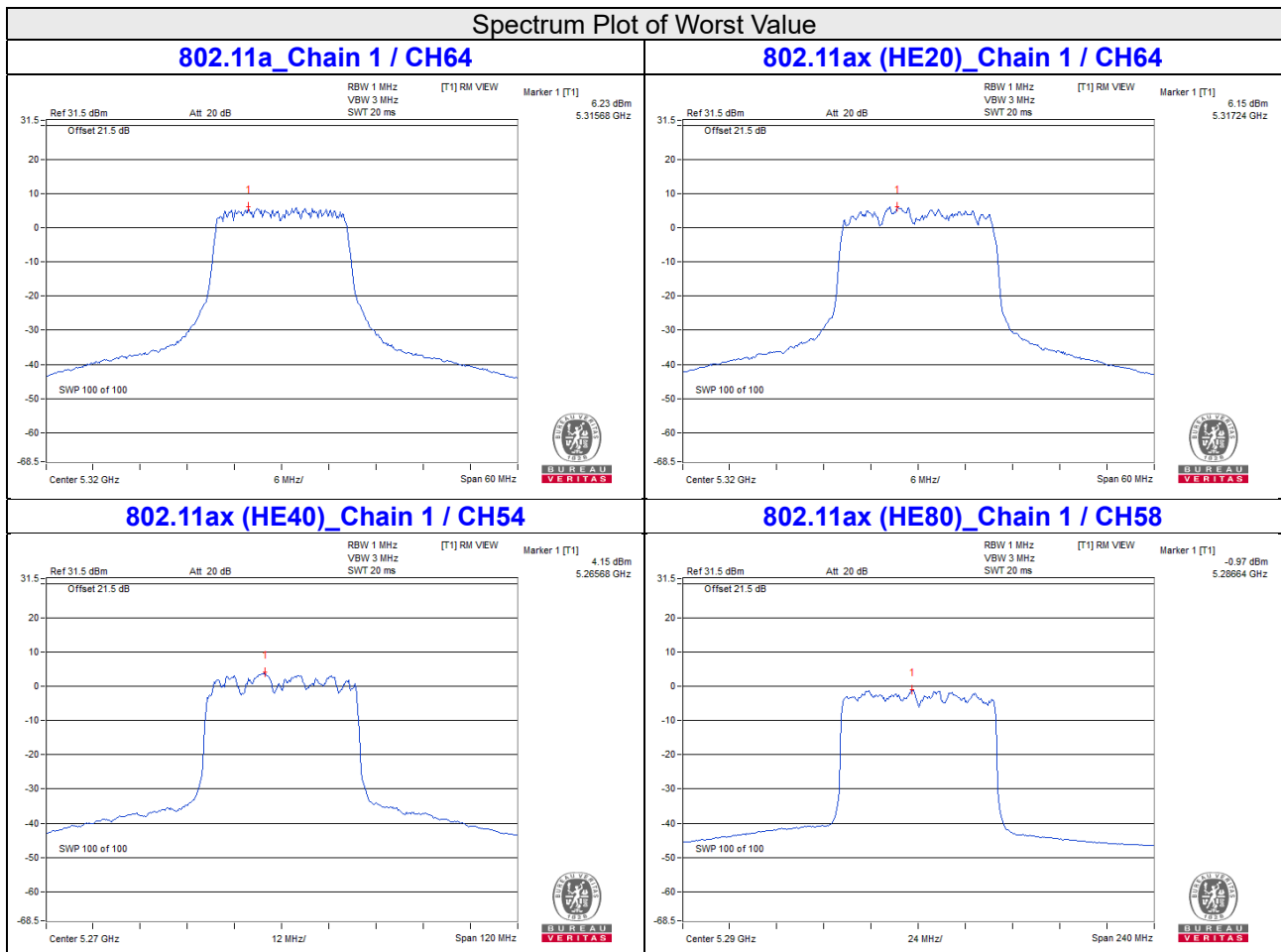
- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 8.06 dBi > 6 dBi, so the power density limit shall be reduced to $11-(8.06-6) = 8.94$ dBm/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
58	5290	-2.47	-0.97	0.20	1.55	8.94	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 8.06 \text{ dBi} > 6 \text{ dBi}$, so the power density limit shall be reduced to $11 - (8.06 - 6) = 8.94 \text{ dBm/MHz}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value



For Radio 3 (U-NII-2C Band)

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	0.73	1.50	-0.43	-0.16	0.30	6.80	7.54	Pass
116	5580	0.11	0.68	-0.30	0.28	0.30	6.53	7.54	Pass
140	5700	1.02	0.03	1.20	-0.07	0.30	6.90	7.54	Pass
144 (U-NII-2C Band)	5720	0.52	0.06	1.45	-0.80	0.30	6.70	7.54	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 9.46 dBi > 6dBi, so the power density limit shall be reduced to $11-(9.46-6) = 7.54$ dBm/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
100	5500	0.63	-0.87	1.36	0.06	0.23	6.62	7.54	Pass
116	5580	-0.83	0.36	1.34	-2.29	0.23	6.10	7.54	Pass
140	5700	-0.30	1.66	0.26	-1.59	0.23	6.41	7.54	Pass
144 (U-NII-2C Band)	5720	-0.61	0.09	0.61	-1.00	0.23	6.07	7.54	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 9.46 dBi > 6dBi, so the power density limit shall be reduced to $11-(9.46-6) = 7.54$ dBm/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
102	5510	0.19	-0.17	0.03	-1.43	0.21	5.93	7.54	Pass
110	5550	0.51	1.26	0.66	0.09	0.21	6.88	7.54	Pass
134	5670	-0.07	-0.57	0.82	-0.50	0.21	6.19	7.54	Pass
142 (U-NII-2C Band)	5710	0.33	0.64	1.02	0.84	0.21	6.95	7.54	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 9.46 dBi > 6dBi, so the power density limit shall be reduced to $11-(9.46-6) = 7.54$ dBm/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

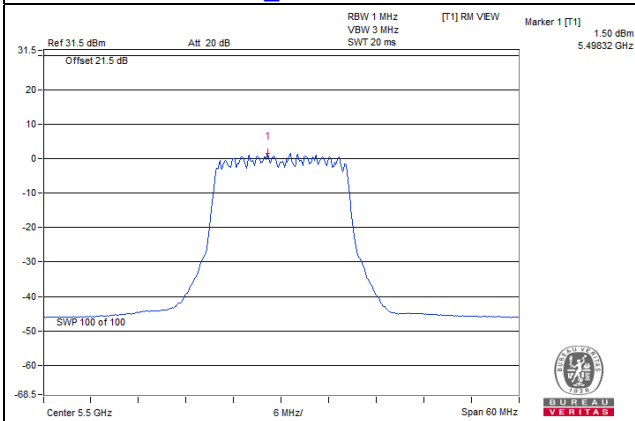
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
106	5530	-2.57	-1.90	-2.74	-3.09	0.20	3.67	7.54	Pass
122	5610	-2.17	-3.47	-3.72	-2.62	0.20	3.27	7.54	Pass
138 (U-NII-2C Band)	5690	-1.30	-2.31	-2.12	-2.09	0.20	4.28	7.54	Pass

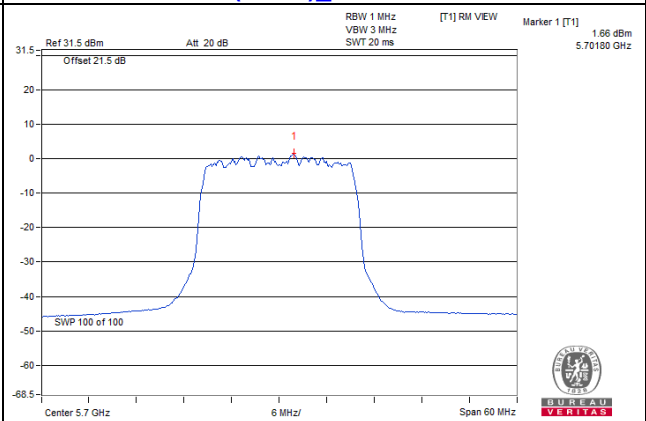
- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4]$ = 9.46 dBi > 6dBi, so the power density limit shall be reduced to $11-(9.46-6) = 7.54$ dBm/MHz.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

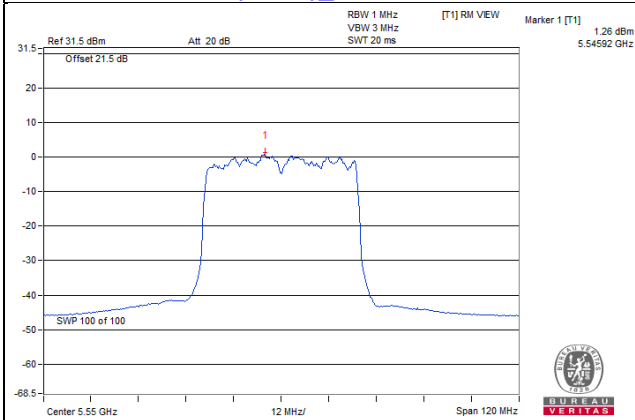
802.11a_Chain 1 / CH100



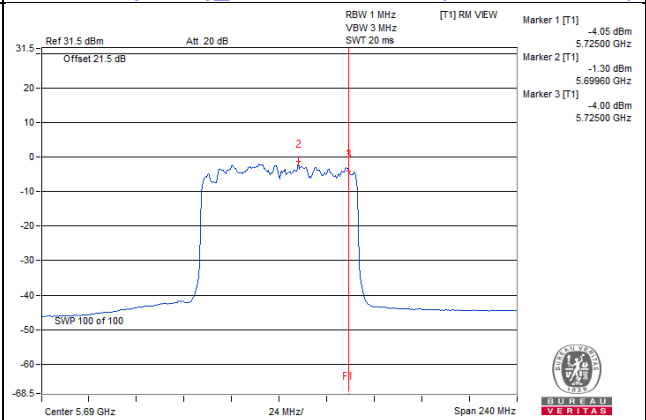
802.11ax (HE20)_Chain 1 / CH140



802.11ax (HE40)_Chain 1 / CH110



802.11ax (HE80)_Chain 0 / CH138 (U-NII-2C Band)



For Radio 3 (U-NII-3 Band)

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
144 (U-NII-3 Band)	5720	-8.52	-8.61	-8.88	-9.49	0.30	-2.54	-0.32	26.30	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm/500kHz}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE20)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
144 (U-NII-3 Band)	5720	-9.09	-9.41	-9.14	-9.46	0.23	-3.02	-0.80	26.30	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm/500kHz}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ax (HE40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
142 (U-NII-3 Band)	5710	-9.22	-9.83	-9.34	-9.69	0.21	-3.28	-1.06	26.30	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm/500kHz}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

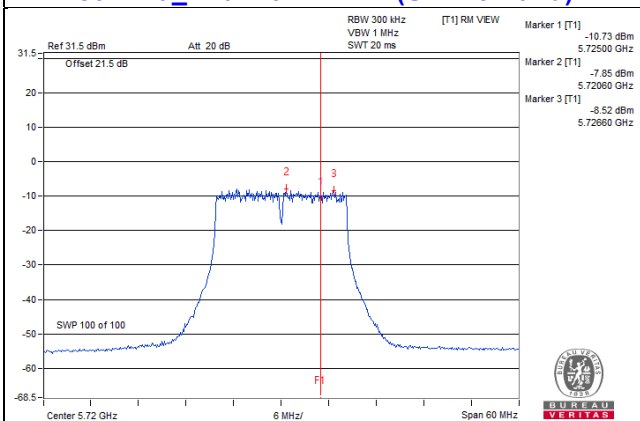
802.11ax (HE80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)				Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
138 (U-NII-3 Band)	5690	-12.82	-14.00	-13.15	-13.52	0.20	-7.13	-4.91	26.30	Pass

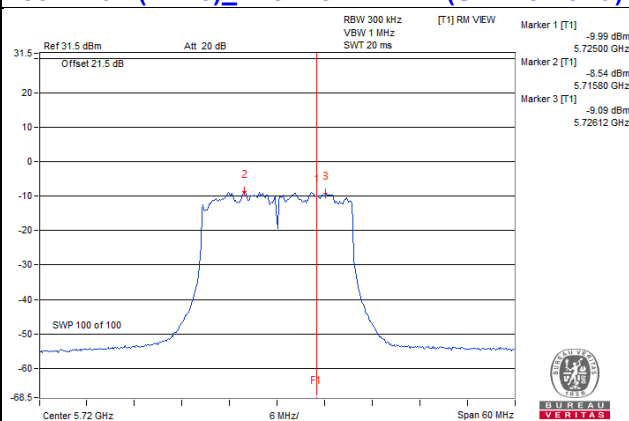
- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
 2. The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (9.7 - 6) = 26.3 \text{ dBm/500kHz}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

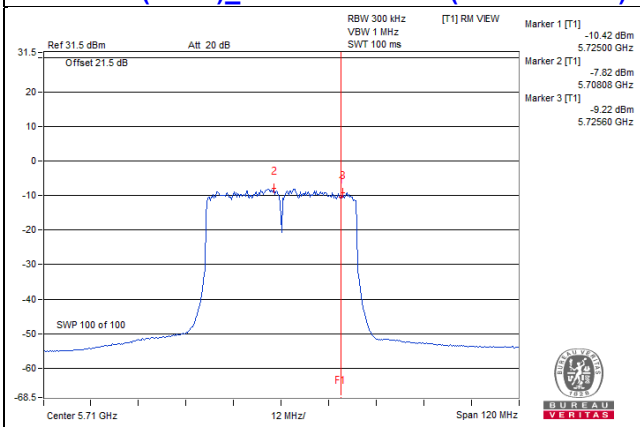
802.11a_Chain 0 / CH144 (U-NII-3 Band)



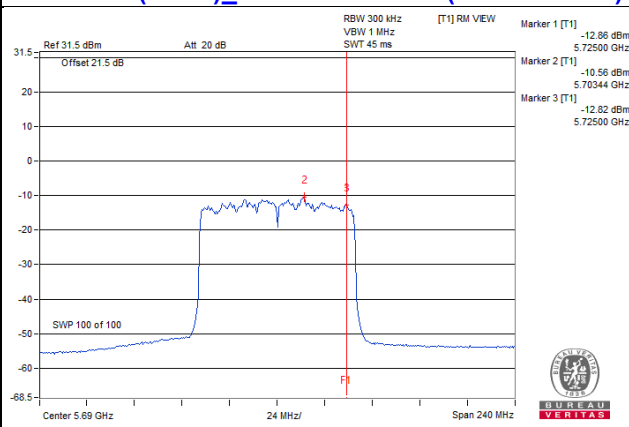
802.11ax (HE20)_Chain 0 / CH144 (U-NII-3 Band)



802.11ax (HE40)_Chain 0 / CH142 (U-NII-3 Band)



802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)

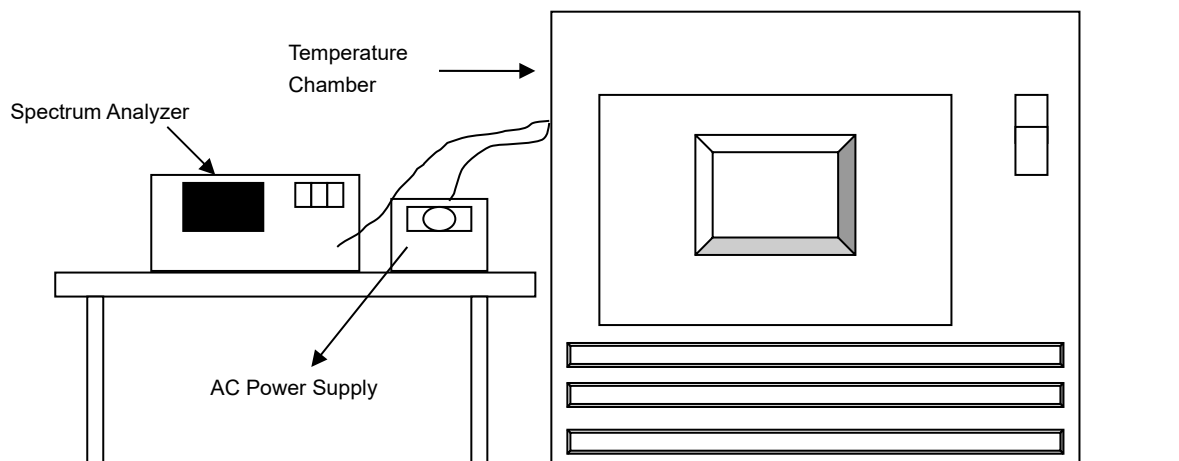


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

For Radio 2 (U-NII-1 Band)

Frequency Stability Versus Temp.									
Operating Frequency: 5260 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
40	120	5259.9842	Pass	5259.9812	Pass	5259.9804	Pass	5259.984	Pass
30	120	5260.0245	Pass	5260.0237	Pass	5260.0281	Pass	5260.0247	Pass
20	120	5260.0217	Pass	5260.0187	Pass	5260.0175	Pass	5260.0208	Pass
10	120	5260.004	Pass	5260.001	Pass	5259.9996	Pass	5260.0008	Pass
0	120	5259.9798	Pass	5259.9804	Pass	5259.9823	Pass	5259.9794	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5260 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5260.0039	Pass	5260.0007	Pass	5259.999	Pass	5260.0017	Pass
	120	5260.004	Pass	5260.001	Pass	5259.9996	Pass	5260.0008	Pass
	102	5260.004	Pass	5260.0009	Pass	5260.0005	Pass	5260.0001	Pass

For Radio 3 (U-NII-3 Band)
Frequency Stability Versus Temp.
Operating Frequency: 5500 MHz

TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
40	120	5500.0087	Pass	5500.0108	Pass	5500.0102	Pass	5500.0097	Pass
30	120	5500.0144	Pass	5500.0102	Pass	5500.0102	Pass	5500.0143	Pass
20	120	5500.0065	Pass	5500.0051	Pass	5500.0036	Pass	5500.0042	Pass
10	120	5500.0127	Pass	5500.0115	Pass	5500.0116	Pass	5500.013	Pass
0	120	5499.9991	Pass	5499.9999	Pass	5499.9951	Pass	5499.9979	Pass

Frequency Stability Versus Voltage
Operating Frequency: 5500 MHz

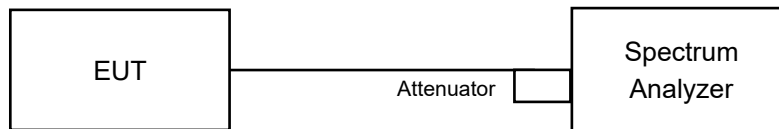
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5500.0057	Pass	5500.0054	Pass	5500.0038	Pass	5500.0044	Pass
	120	5500.0065	Pass	5500.0051	Pass	5500.0036	Pass	5500.0042	Pass
	102	5500.0054	Pass	5500.006	Pass	5500.0026	Pass	5500.0033	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.7.7 Test Results

For Radio 3 (U-NII-3 Band)

CDD Mode

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144 (U-NII-3 Band)	5720	3.15	2.9	3.15	3.16	0.5	Pass

802.11ax (HE20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
144 (U-NII-3 Band)	5720	4.43	4.43	4.39	4.37	0.5	Pass

802.11ax (HE40)

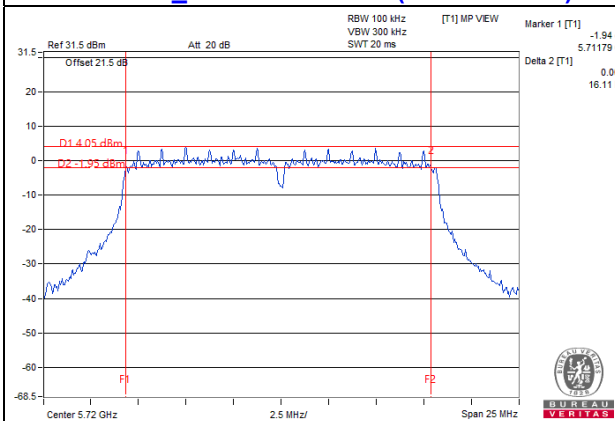
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
142 (U-NII-3 Band)	5710	4.01	3.53	3.4	3.91	0.5	Pass

802.11ax (HE80)

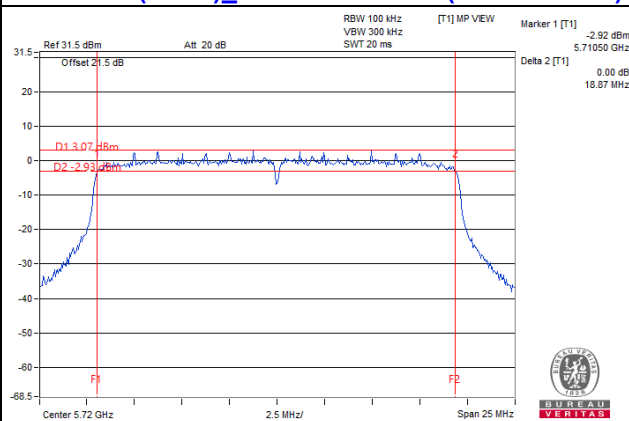
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
138 (U-NII-3 Band)	5690	3.54	3.69	3.88	4	0.5	Pass

Spectrum Plot of Worst Value

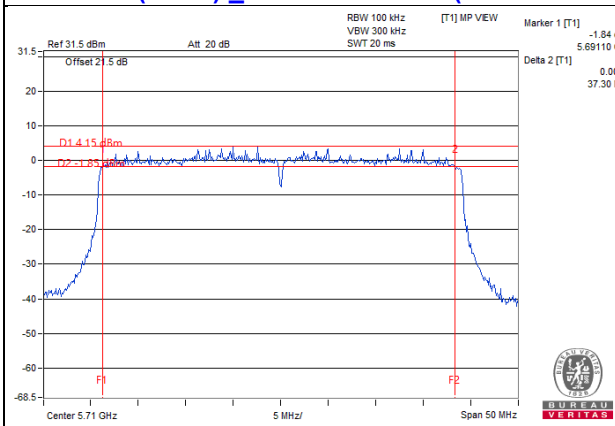
802.11a_Chain 1 / CH144 (U-NII-3 Band)



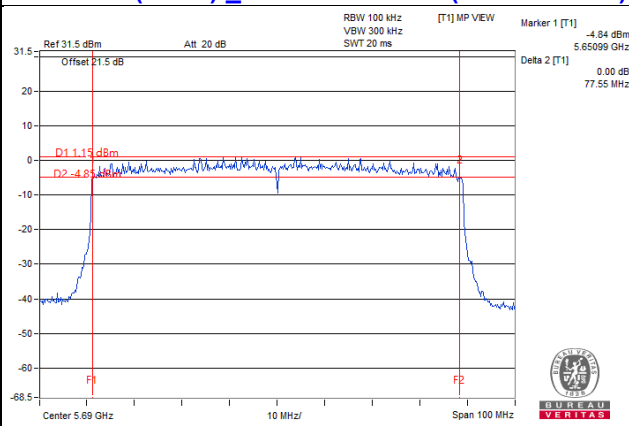
802.11ax (HE20)_Chain 3 / CH144 (U-NII-3 Band)



802.11ax (HE40)_Chain 2 / CH142 (U-NII-3 Band)



802.11ax (HE80)_Chain 0 / CH138 (U-NII-3 Band)



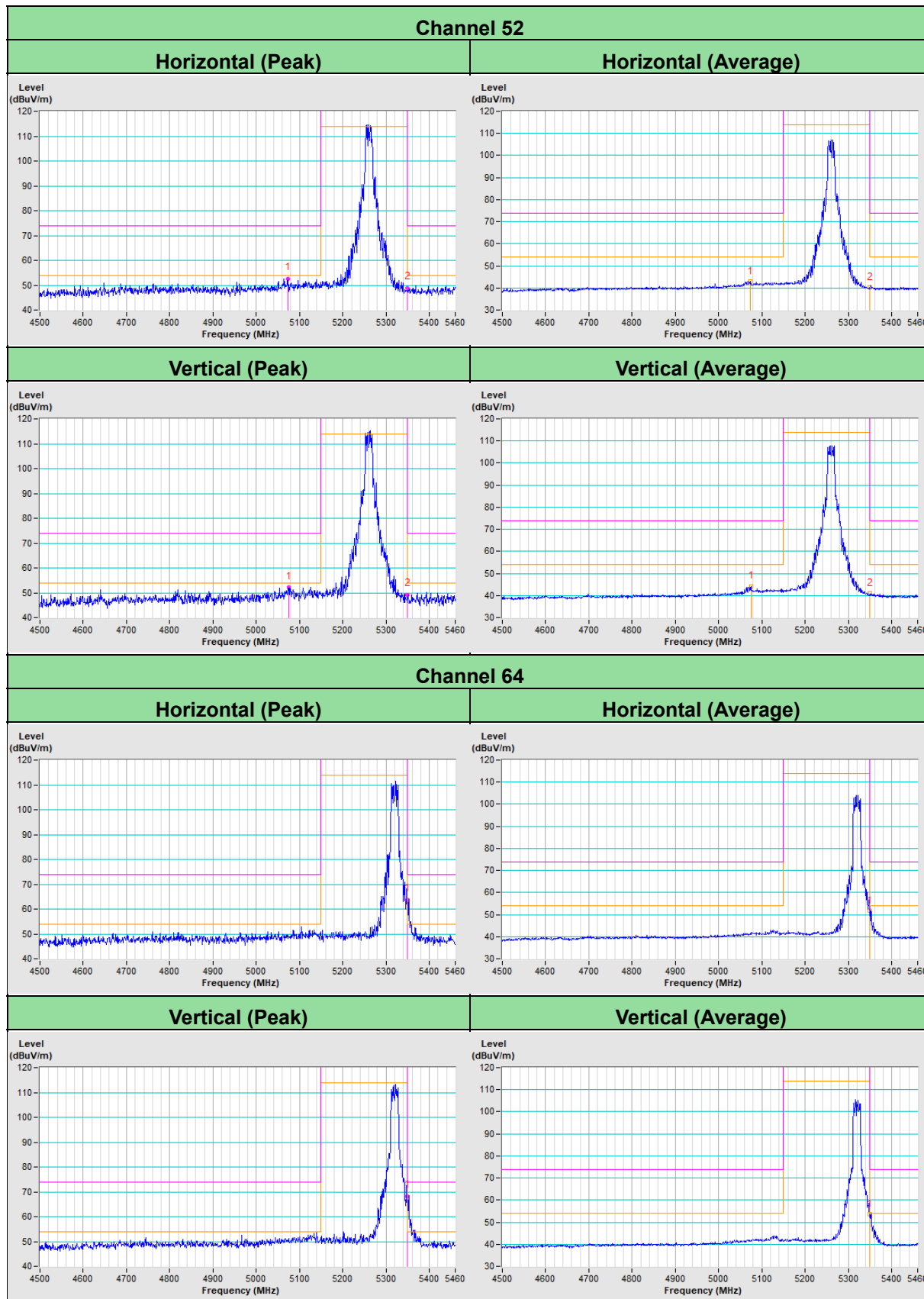
Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

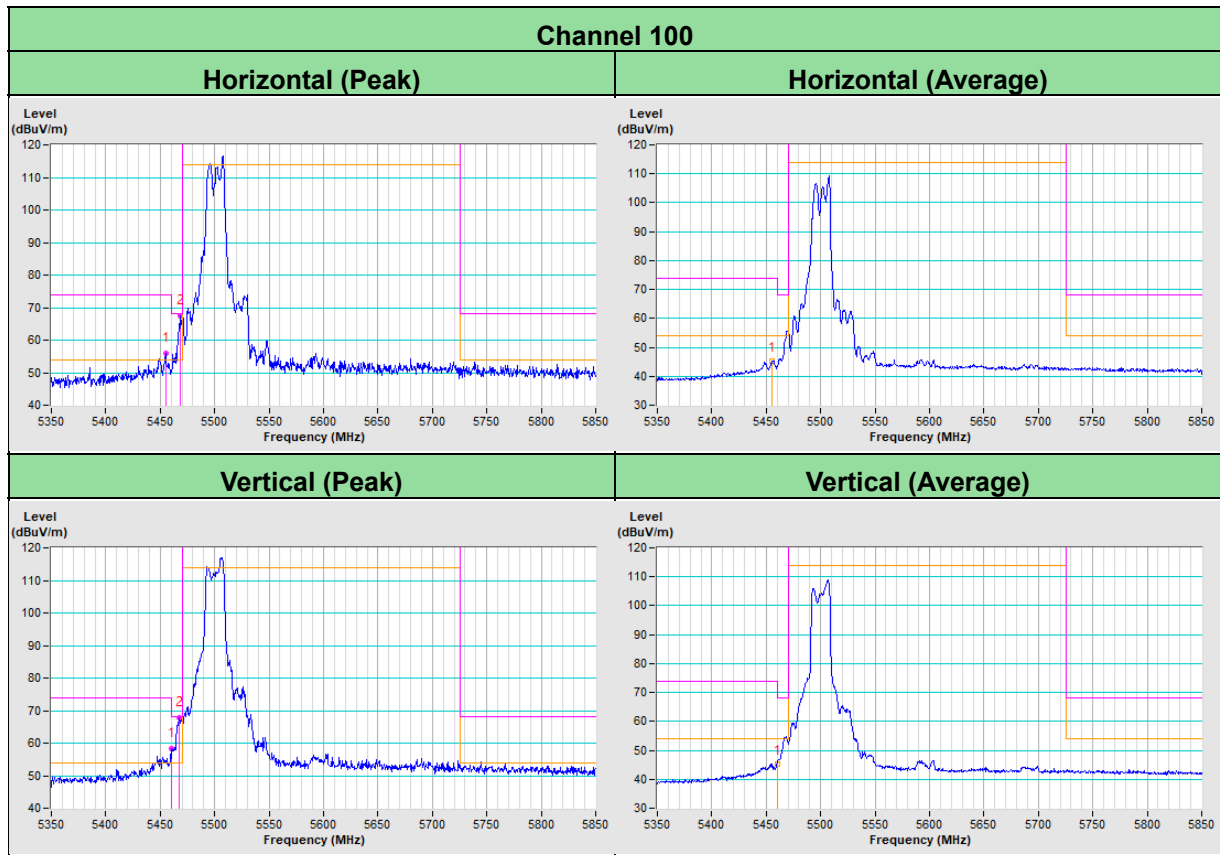
5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

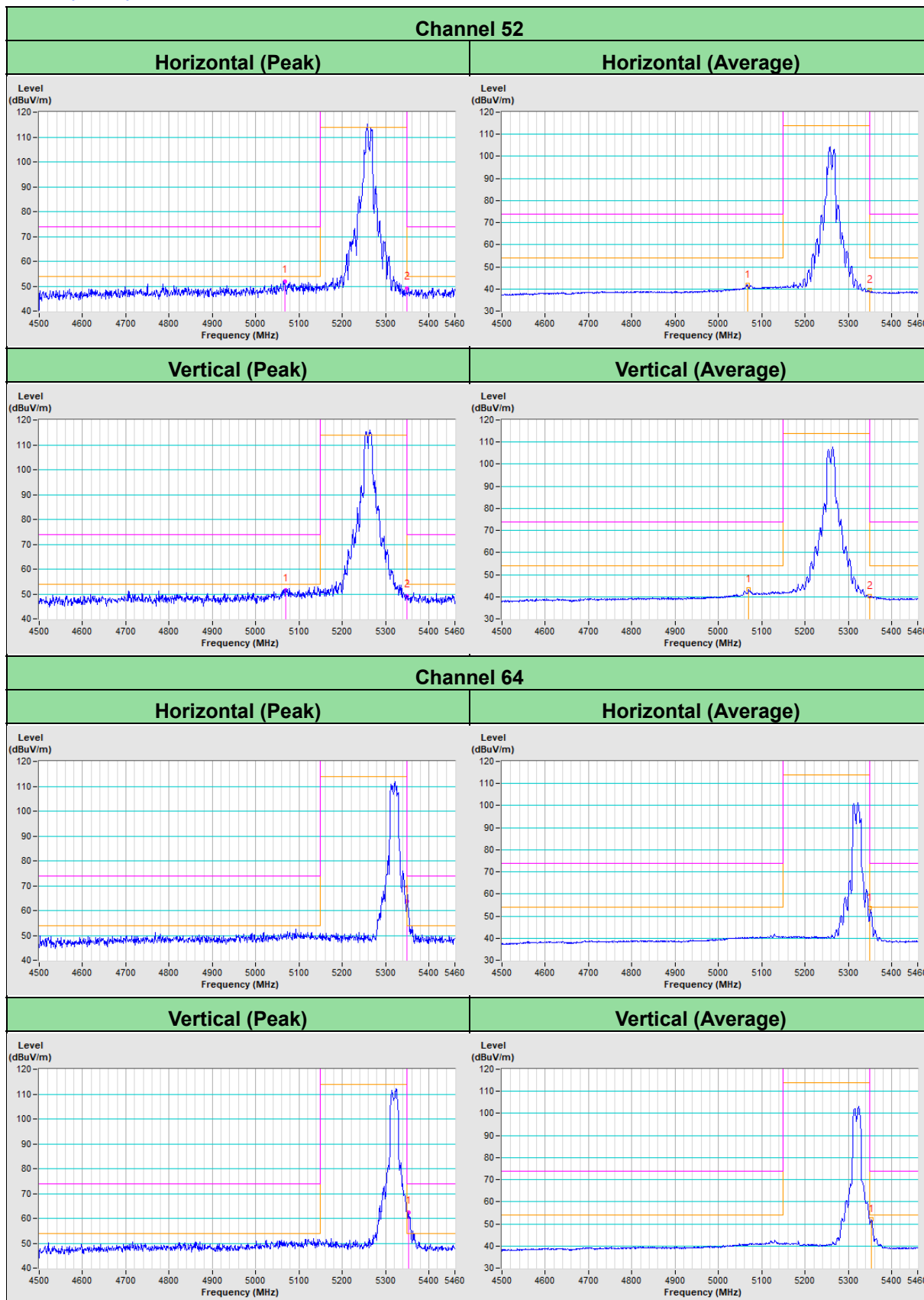
Annex A - Band-Edge Measurement (For U-NII-2A, U-NII-2C band)

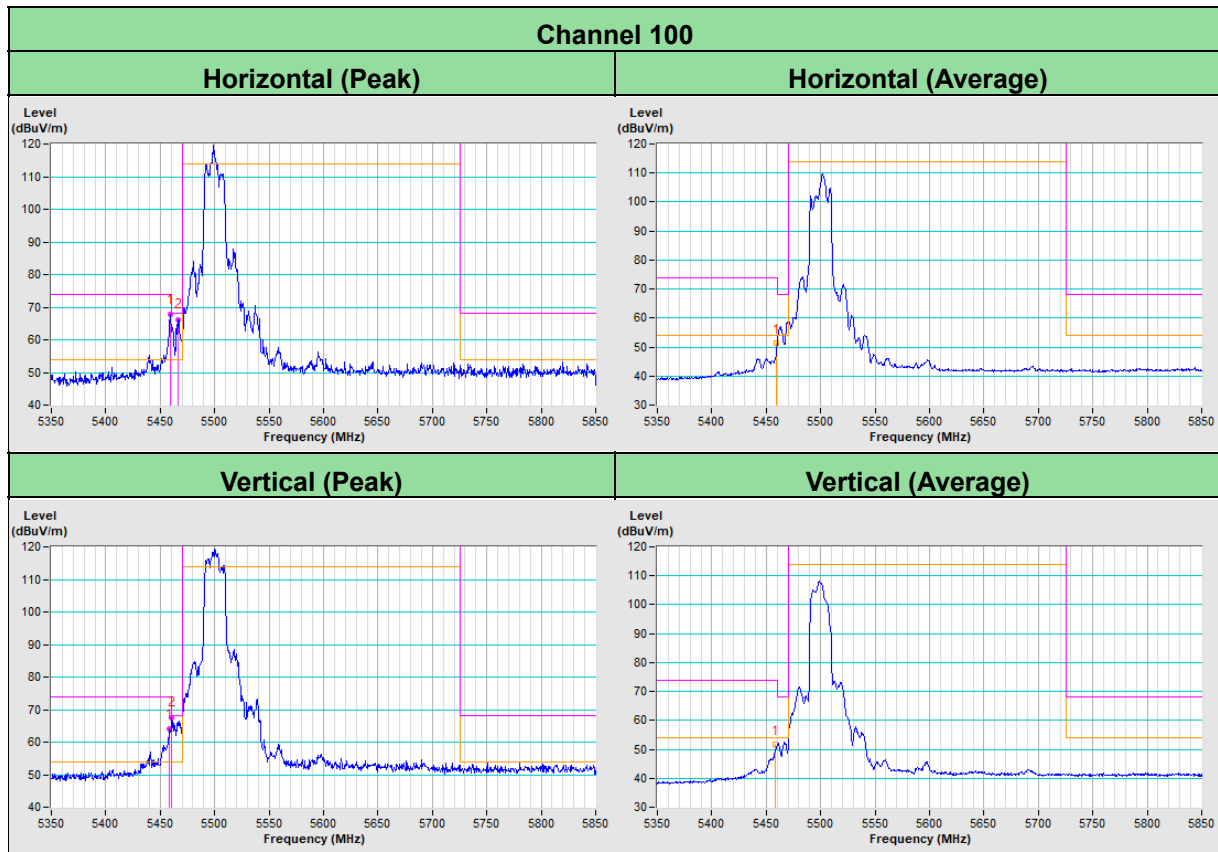
802.11a



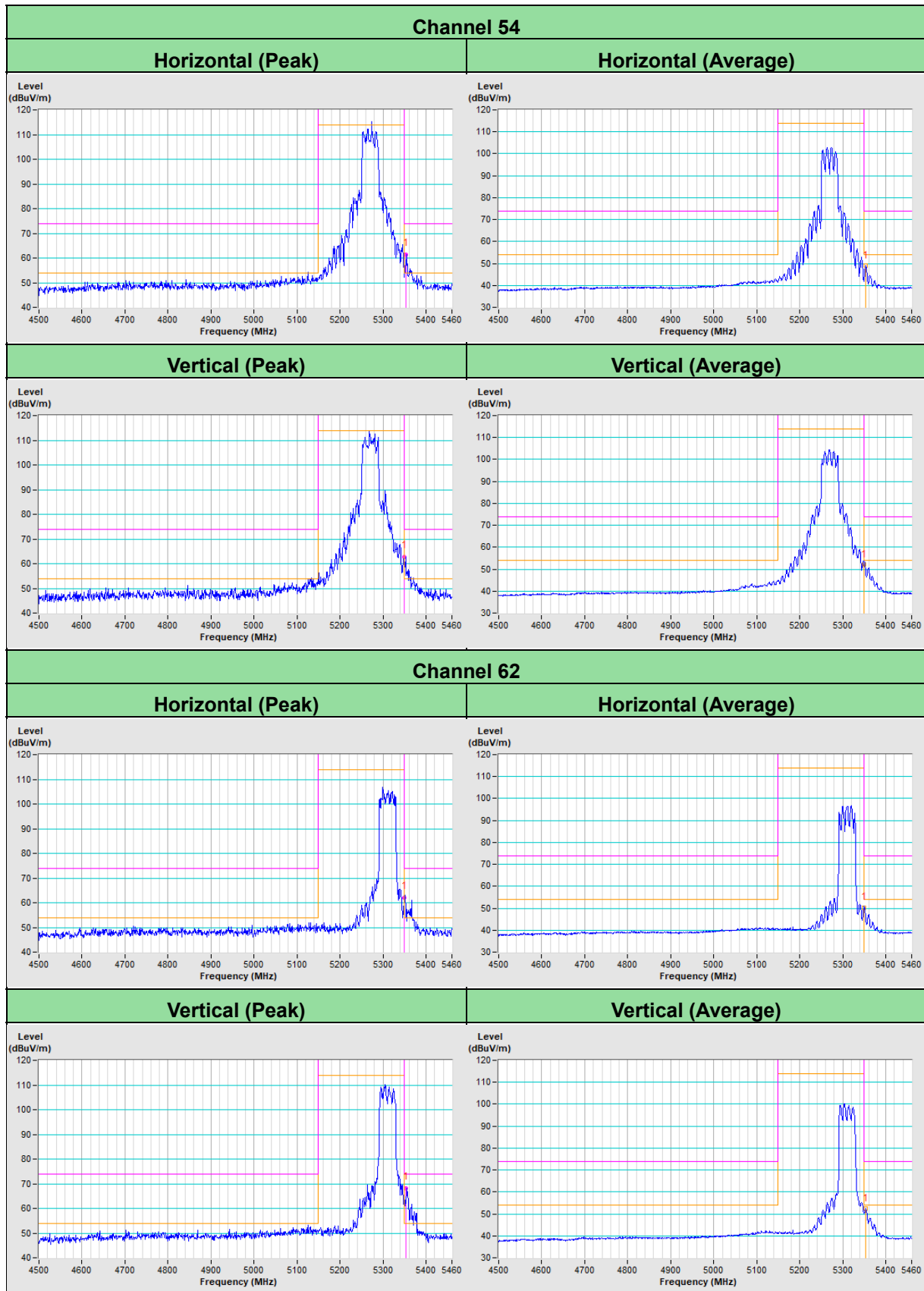


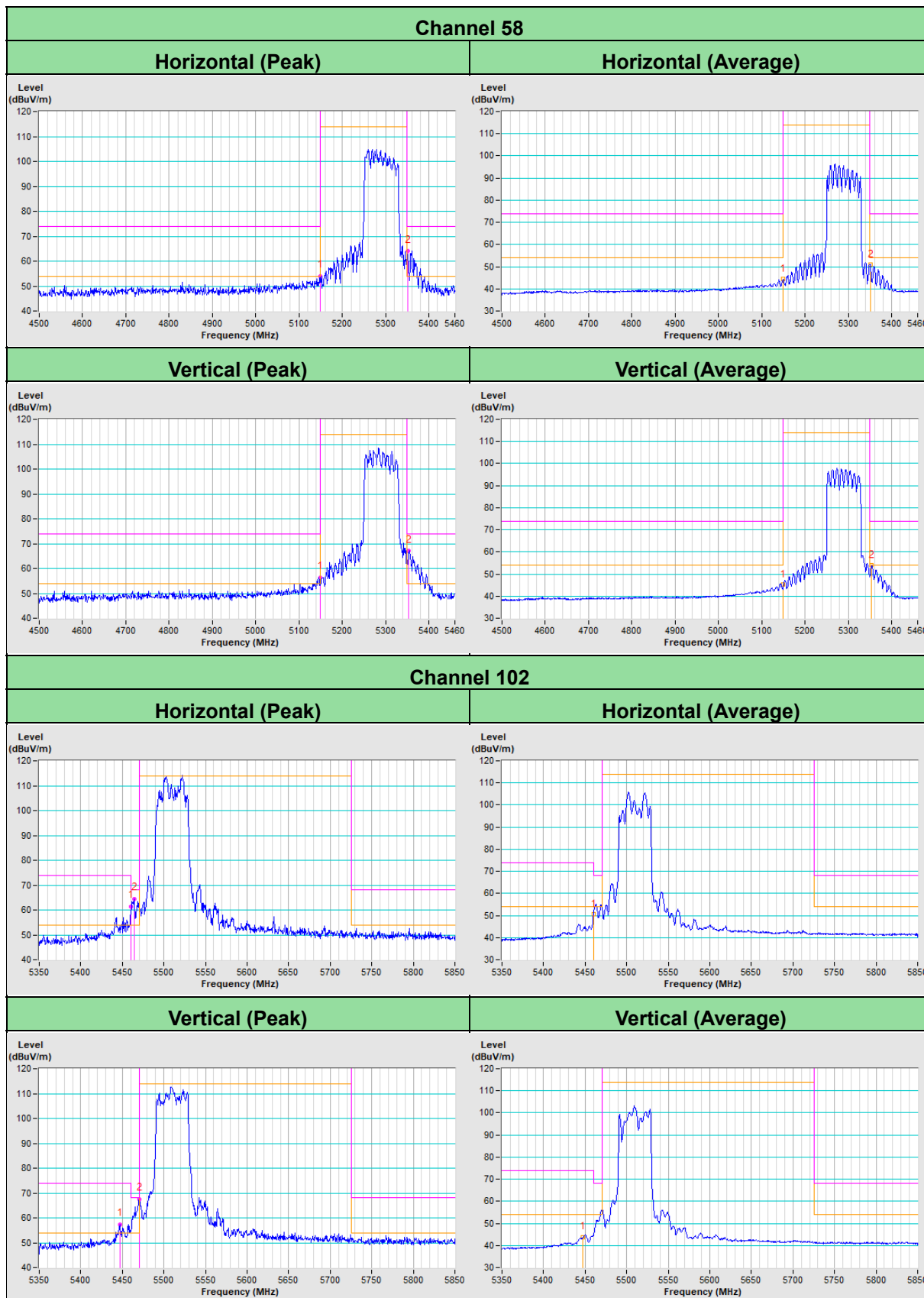
802.11ax (HE20)



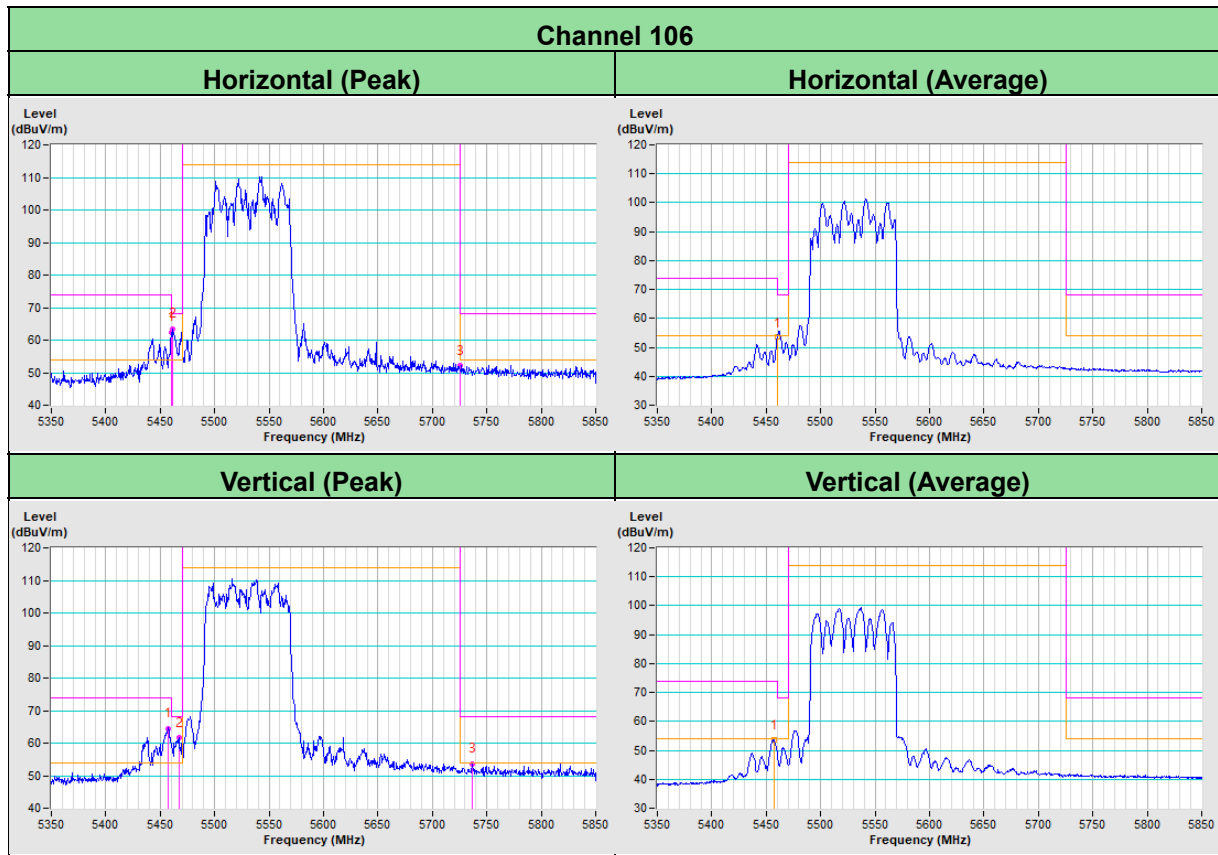


802.11ax (HE40)





802.11ax (HE80)



Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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